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ORIGINAL ARTICLES.

THE MORBIDITY AND MORTALITY OF NEGRO CONVICTS.[1]

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IT is my purpose in this paper to present a few practical facts, with such deductions as may be logically made therefrom, concerning the morbidity and mortality of the negro as a convict.

Since my connection with the convict system of Alabama, there have been but two races represented in our convict population: the Caucasian and the negro—the latter including that hybrid of humanity, the mulatto of all shades. From the consecutive examination of some 2500 convicts that were in the penitentiary in March, 1883, and received from jail from that date to October, 1884, and from March, 1887, to October, 1890, it appears that 15.43 per cent. were white, and 84.57 per cent. were negroes, or in a ratio of 1 white to 5.41 negroes. Questions of health, morbidity, and mortality, then, practically mean the consideration of these important subjects in connection with and as applying to the negro race.

It appears from the penitentiary physician's and inspector's reports,[2] covering a period of nine years and seven months, that there were, from all causes, 553 deaths. Of the 553 deaths, 37, or 6.67 per cent., were among white convicts, and 516, or 93.33 per cent., among the negro convicts. Thus the ratio of white to negro deaths was 1 to 13.94, while the percentage of mortality of the white and negro was as 1 to 2.57. That is to say, that out of an equal number of white and negro convicts the mortality would be more than two and a half times greater in the negro.

Of the 553 deaths, 70, or 12.65 per cent., died from the direct and indirect effects of violence—accidental, suicidal, or homicidal. Of the 70 deaths from violence, 14 were white, or 37.83 per cent. of the total mortality among the white convicts; 56 were negroes, or 10.85 per cent. of the total mortality among the negro convicts. This leaves, dying from disease, including not known, 483, to wit: White, 23, or 4.76 per cent.; negro, 460, or 95.24 per cent; ratio of white to negro deaths from disease, 1 to 20, while the actual percentage of mortality is 1 to 3.69. That is to say, out of an equal number of white and negro convicts, the mortality of the latter would be 3.69 to 1 of the former, or a little more than 250 per cent. greater.

From these figures the following facts are established:

1. That there were nearly 5.50 times as many negroes as whites committed for crime.

2. That the negro mortality was nearly three times greater than the white.

3. That over one-third of the white deaths were due to violence.

4. That only a little over 10 per cent. of the negro deaths were due to violence.

5. That from an equal number of white and negro convicts there would be a little more than 3½ of the latter to 1 of the former that die from disease.

From these facts it may be logically concluded:

1. That (taking it for granted that our laws are impartially administered so far as race is concerned) there is something in or about the negro, some inherent principle or acquired property (the former being a part of his original creation, or from long-continued hereditary influences—the latter from environment, religious, social, or political), that prompts him to acts of crime, or that there is a deficiency of that restraining power that limits the action of the universal depravity of the races.

2. That as a physical entity he is, so far as his convict life is concerned, inferior to the white man, in anatomic formation and physiologic performance of function; or there is something in him that more greatly predisposes him to disease; or that aggravates the type of disease; or that he is wanting in recuperative or reconstructive power.

The first question I leave to the political economist, the moralist, or the philanthropist.

The second, however, to those who are responsible for his health and life, is a problem of absorbing interest. Strange to say, this aspect of the convict-

[1] Read before the Alabama State Medical Association, 1893.

[2] From March, 1883, to October, 1884, including only State convicts, wherever confined; from October, 1884, to October, 1886, State and County convicts; from October, 1886, to October, 1888, including only State and County convicts at the Pratt Mines; from October, 1888, to October, 1890, including State and County convicts at the Pratt Mines and State convicts at the walls at Wetumpka; and from October, 1890, to October, 1892, State convicts at the walls and at the Pratt Mines.

problem in Alabama has never received the attention it deserves, so far as the question of prison-life, work, and discipline affects the health and lives of negro convicts. So far as I know, there has never been any attempt to compare the mortality and morbidity of white and negro convicts, with a view of ascertaining the differences, if any exist, and the causes therefor.

I submit below in parallel columns, one for whites and one for negroes, a classification of the primary causes of death:

	NEGRO.	WHITE.
Unknown	37	1
Violence	56	14
Pulmonary tuberculosis	72	1
Peritoneal "	27	1
Acute miliary "	25	0
Miscellaneous "	40	3
Croupous pneumonia	66	2
Catarrhal "	4	0
Fibroid "	7	0
Pleurisy	11	0
Typhoid fever	26	3
Other fevers	16	0
Meningitis	15	3
Meningitis (tuberculous)	2	0
Pericarditis	3	0
Endocarditis	0	1
Organic heart-disease	28	3
Aneurism	2	0
Dropsy	5	0
Gastro-enteritis	27	2
Dysentery	1	1
Tertiary syphilis	2	0
Pernicious anemia	0	1
Erysipelas	2	0
Apoplexy	2	0
Paralysis	0	1
Lumbar abscess	1	0
Measles	1	0
Carcinoma	2	0
Bright's disease	2	0
Miscellaneous	19	0
Cystitis	1	0
Intussusception	1	0
Hip-joint disease	1	0
Pott's disease	3	0
Measles	7	0
Convulsions	2	0
	516	37

As a supplement to the foregoing, I submit also in parallel columns, one for white and one for black, a classification of the complications existing:

	NEGRO.	WHITE.
Croupous pneumonia	22	2
Catarrhal "	9	0
Pleurisy with effusion	16	0
Pulmonary tuberculosis	1	1
Tuberculous meningitis	5	0
Acute miliary tuberculosis	4	0
Tuberculosis of bowels	2	0
" of larynx	1	0
Organic heart-disease	8	1
Pericarditis	7	0
Atheroma	1	0
Tuberculous pleurisy	4	0
Gastro-enteritis	11	0
Perforation of bowels	10	1
Meningitis	5	0
Pleuro-pericarditis	1	0
Pneumonia and meningitis	1	0
Cystitis and stricture	1	0
Dropsy	7	0
Erysipelas	3	1
Dysentery	1	0
Bright's disease	1	0
Syphilis	1	0
Phlegmonous abscess	2	0
Cardiac thrombus	17	0
Malarial fever	1	0
Rheumatism	1	0
Pulmonary infarction	5	0
Abscess (parotid)	1	0
Paralysis	2	0
Measles	2	0
Jaundice	2	0
Bronchitis	2	0
Myocarditis	2	0
Pulmonary	4	0
Pericarditis and meningitis	1	0
	164	6

In discussing these tables, the 70 deaths from violence, and 37 "not-known" causes, are not here considered, leaving negroes, 424, and whites, 22. It appears that the primary diseases in the 424 negro deaths involved the thoracic organs in 265, or 62.50 per cent., to wit: Various forms of tuberculosis, 137; of pneumonia, 84; pleurisy, 11; heart, pericardium, and large bloodvessels, 33.

Of the 22 white deaths, the thoracic organs were involved with the primary disease in 9, or 40.90 per cent., to wit: Tuberculous disease, 4; pneumonia, 2; organic heart-disease, 3. It thus appears that there were nearly double the deaths among negroes from acute and chronic thoracic disease.

Add to these the same classes of disease in the complications, and we have 358, or 84.43 per cent., among the negroes, and 14, or 63.63 per cent., among the whites. These complications were in many cases the cause of death, but they do not represent a corresponding number of convicts, as sometimes two or more complications existed in the same case.

From acute febrile diseases there were 42 deaths, or 9.90 per cent., 26 from typhoid and 16 from other forms of fever, among the negroes; 3, or 13.63 per cent., among the whites. Occurring as a primary disease and as complications, there were among the negroes 50 cases of organic heart-disease, 36 chronic and 2 of acute myocarditis, 12 of pericarditis, making a total of 50, or 11.71 per cent.; whites, 6, or 27.22 per cent. Meningitis occurred as a primary disease and as a complication in negroes in 20 cases, or 4.71 per cent.; whites in 3 cases, or 13.63 per cent. Tuberculous disease in all forms existed as a primary disease or complication among the negroes in 182, or 42.92 per cent.; among the whites, in 6, or 27.27 per cent. Croupous pneumonia existed

among the negroes in 88, or 20.75 per cent.; among the whites, 4, or 18.18 per cent.

From the foregoing facts the following conclusions are legitimately reached:

1. That there is a much larger class of diseases represented among the negro than among the white deaths.

2. That the whites are more liable to die from accident, meningitis, and the essential fevers, than the negroes.

3. That the negroes are especially predisposed to tuberculous disease, the various forms of pneumonia, pleurisy, and organic heart-disease; in other words, to thoracic diseases generally.

The problem therefore resolves itself into the inquiry: Why are negro convicts predisposed to the development of these diseases?

1. Is it due to any deficiency in the anatomic development or formation? I shall have very little to say in answer to this question. Aside from the well-known facts—the black skin, flat nose, and flat foot, and the like—there is, in the negro race, as compared to the white, a lesser cranial and thoracic development and a greater abdominal and genital development. It is apparent to us all that the cranium is smaller in the negro than in the white; that the cranial capacity is less necessarily follows. Post-mortem examinations have convinced me that the cranial wall is thicker, the brain smaller, the convolutions less prominent, and the sulci more shallow. Hence, the inevitable conclusion follows that brain-function is not equal to that in the white race.

An examination of hundreds, or rather several thousand negroes, has convinced me that the normal thoracic movements in ordinary respiration are deficient, and that the thorax is not capable of as great movement during forced inspiration and expiration.

If this be true, what is the reason?

Does it lie in the want of muscular development, mobility of the bony walls, pulmonary elasticity or capacity, or in the encroachment of the abdominal organs below? In my judgment the causes are to be found: (*a*) in less lung-capacity; (*b*) less muscular development, particularly of the accessory muscles of respiration; and (*c*) the greater or less encroachment of the abdominal organs. The first two are largely conjectural; but I think the latter is susceptible of demonstration by physical signs. Examine, for example, a series of whites and a series of negroes, noting carefully the line of beginning hepatic dulness on the right side, and the line of beginning gastric tympany on the left; it will be found that these lines are *higher* in the negro than in the white. If there be no error in these observations, the conclusion is inevitable that the perpendicular diameter of the interior of the thorax is thereby diminished. In a general way I will say that it is very rare that the physical signs are *absolutely negative*. There may be diminished expansion, a prominent clavicle with depression below and above, and asymmetry in movement, points of asymmetric percussion-sounds, vocal resonance, and fremitus, with more or less modification of the normal, rhythmic, clear vesicular murmur, with, in a considerable percentage of cases, adventitious sounds. The latter remarks are true to some extent in both races, but much more conspicuously so in the negro.

As to the greater abdominal and genital development, all one has to do is to see 300 or 400 negroes naked in a large bath-house, and then step through a door and see 75 or 100 white men in the same condition, to convince him of the correctness of this view.

The general muscular development, taken as a whole, is good in the negro; but the chest-muscles, and those below the elbow and knee, are deficient. I conclude, therefore, that the negro, as a whole, is inferior to the white in anatomic development and in the symmetric arrangement of systems and organs. That, therefore, there should be a correspondingly weakened function and predisposition to disease is apparent. That environment has a great deal to do with the causation of disease, both predisposing and exciting, there can be no question.

The question, therefore, remains: Have the white and negro convicts the same environment? I answer emphatically that they have. This is certainly true at the places whence the foregoing statistics were obtained. Hence the difference in mortality cannot be explained by a difference in environment.

The effects of prison-life, however well ordered, are, regardless of race, beyond all doubt detrimental to both mind and body. It affects the mind more in the white and the body more in the negro.

Now, just in proportion to the bad hygienic surroundings, both general and personal, will these effects obtain, particularly those on the physical condition. If these conditions are such as to be productive of disease they will operate more disastrously on the negro, both in morbidity and mortality. Therefore, it is under more or less unfavorable environment that the physical inferiority of the negro race becomes manifest. In certain statistics published by Colonel John G. Milner, it appears that in certain Northern prisons, in New Jersey, Pennsylvania, New York, and Ohio, and in the border State of Missouri, for a series of years the average white mortality was 1.55 and the negro mortality 5.05 per annum. The same may be said of the negro as a soldier. Among the United States white troops during the war the average

annual death-rate was 53.04 per 1000; and of colored troops 143.04 per 1000, or 1 to 2.69, a difference almost as great as that in the Alabama penitentiary. Given the same environment, the white man will have much the greater longevity. If the environment be bad, then the negro mortality will increase much more rapidly than the white. That prison-life, however well ordered, is always more or less unfavorable to life and health, the statistics of civil and military prisons prove. Why is this so?

The following, in my judgment, are the principal reasons, so far as civil prisons are concerned:

First—as to the convict himself. If he is guilty, there is not only a possibility but even a probability that there is some occult condition which we do not understand, inherited or acquired, that operates upon the mind in such a way as to suggest crime, or that cripples the moral inhibition that restrains crime, in either case affecting that mental and moral equipoise that inspires honesty and obedience to law, so that crime is committed not merely because of the common depravity of mankind, which in the individual criminal may be unrestrained, but because of this occult condition over which the criminal has no control. If there be truth in this conjecture, is it not logical to conclude that this occult condition would affect, in some way, the physical condition also? If the prisoner be innocent, then the horror of the situation—innocence in chains—would certainly act detrimentally upon health.

In both cases, whether he be guilty, the victim of some imperative power that forces him to crime, or the voluntary agent of total depravity; or innocent, the victim of circumstances or of perjury, the prisoner is a human being deprived of his liberty, with all that that means to him, socially, politically, religiously, and sexually, and the inspiration to work, to live, is almost dead. He becomes subdued and cowed, and his whole mental, moral and physical nature is more or less depressed and weakened. He therefore at once becomes more susceptible to disease; latent diatheses become active; existing mild diseases are increased in severity; the susceptibility to germ-infection is increased; and, finally, his ability to withstand disease of all kinds is more or less diminished.

Second. The change of hygienic surroundings, from a segregated to an aggregated relationship—from home, however humble, to prison, where he is thrown in contact with hundreds of his fellow-beings, breathing more or less the same air, becoming exposed to the infection of germs of various diseases, especially the tubercle-bacillus, submitting to a hygiene to which he has not been accustomed—in a word, to a changed environment altogether.

Third. The change of his personal hygiene in matters of clothing, diet, sleeping, drinking, and the kind and amount of work, etc.

These general remarks apply to all convicts, white and black, but the first affects the white more, and the negro least; the last two affect the negro more especially. That is to say, the negro has less capacity to accommodate himself to any new environments, particularly to bad ones. Finally, in the majority there occurs, sooner or later, a certain mental and physical resignation to the inevitable, that counteracts to a great degree the evils of prison-life; in other words a hygienic mental, moral and physical acclimation.

These conclusions are supported by the following facts: First. The greatest amount of morbidity and the greatest mortality are among those recently received. For example, the total deaths at the Pratt Mines, of State and County convicts for the two years ending October 1, 1888, were 80. Of these only 17 were received prior to January 1, 1886, and 63 from that date to October 1, 1888.[1] Also the total deaths of State and County convicts at the Pratt Mines, and State and County convicts at the walls, for the two years ending Oct. 1, 1890, were 132. Of these, 59 had been in prison more than one year, and 36 not more than six months.[2] Further, convicts are not classed up until they have been in prison for some time, and, therefore, the third and fourth-class convicts are mostly of those recently received. Percentage of mortality for each class—two years: First class, 3.68; second class, 6.49; third class, 8.61; fourth class, 13.79; $11 class (*i. e.*, those who work outside and for whom the contractors pay $11), 5.40.

Thus the mortality diminishes as the class is increased and *vice versa*.

The following is the percentage of morbidity represented in the days lost: First class, 13.80; second class, 18.47; third class, 19.58; fourth class, 41.38, or nearly one-half the total; $11 class, 6.79. It is a fact about which there can be no dispute, that the greater the number of convicts required to keep up a certain average, the latter depending upon the average term of the convicts, the greater is the morbidity and mortality. Hence the death-rate of County convicts is always greater than that of State convicts.

I think that I have shown in this paper that the negro, as a convict, so far as a low rate of mortality is concerned, is a failure. It would be interesting to enter into a full and complete discussion of the adaptability of the negro for coal-mining, but I forbear, inasmuch as this subject was thoroughly considered by me in a paper read before

[1] See Inspector's Report, p. 199.
[2] See Inspector's Report for 1890, p. 254.

this Association two years ago. I will say, however, that there is no doubt in my mind that the county convict system ought to be abolished altogether, and if not altogether, certainly so far as mines are concerned. And not more than 50 per cent. of the negroes sentenced to the penitentiary should work in coal-mines, and not even these unless there is adopted a system of prison hygiene that will permit of some open-air exercise, with sunlight.

In conclusion, I will submit that the race problem will be largely settled in the event of public works being established throughout the South—which means ready money for the negro; this means the profitable practice of prostitution, and this in turn means gonorrhea and consequent sterility; tuberculosis and other pulmonary diseases will do the rest.

SOME REMARKS ON THE PRACTICAL TREATMENT OF HEPATIC ABSCESS.[1]

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DURING the last year there came under my care two cases of hepatic abscess, presenting features of peculiar interest from an operative standpoint, and, on reviewing the literature on the subject, I was so struck with the wide difference of opinion in reference to treatment, that I determined to make a complete investigation of the causes, and, if possible, arrive at the methods which would present the least immediate mortality and the most perfect technique.

CASE I.—On September 7, 1892, C. B., an Irishman, aged fifty-three, a resident of Galveston for the last ten years, was admitted into the Sealy Hospital, under my care. Twenty-five years previously, when in Rangoon, he had contracted an acute dysentery, which remained chronic up to a few months before admission. He had repeated exacerbations, and four months before suffered from intense diarrhea, associated with pain and tenesmus, and occasionally with pain in the right side. On September 24th the patient came under my personal notice, and his condition was then as follows: He was slightly jaundiced, and much emaciated; the morning temperature was 101°, the evening temperature 102°; the pulse varied from 120 to 130; the tongue was red, raw, and coated. He complained of intense pain in the right side. Inspection revealed a great bulging of the right lower costal zone, and deficient respiratory movements in the right lower ribs. The liver was enlarged both upward and downward; the lower edge could be easily palpated, and ran in a curved line to the right, across the abdomen, touching in its course a point midway between the right costal margin and the umbilicus. Superficial dulness was absolute, and extended upward as high as the fifth rib in the mammary line, the seventh rib in the axillary line, and the ninth rib in the scapular line. There was no perceptible movement of the mass underneath the abdominal wall, nor could a friction-sound be distinguished. In the center of the abdominal swelling a soft spot could be felt, where an indistinct sense of fluctuation was perceptible. There was still diarrhea, and the stools were examined carefully for amebæ, but with a negative result. The fluctuating spot before mentioned was punctured with a hypodermatic needle, and thick, flaky pus flowed slowly through the needle. This on examination contained no amebæ, but was rich in crystals of leucin and tyrosin, with a few disorganized liver-cells. Unfortunately, no cultivation-experiments were made, so that it is impossible to say whether streptococci were present or not.

On September 24th, the patient being under the influence of chloroform and morphin, an incision, parallel to and two fingerbreadths below the costal margin, was carried over the most prominent part of the swelling. This was rapidly deepened, and adhesions were soon discovered, uniting the liver and the abdominal wall. A scalpel was passed into the abscess-cavity, and an incision made in the walls large enough to admit two fingers. The pus, which escaped with difficulty on account of its thick, glairy nature, contained numerous pieces of disorganized bile-stained liver-substance, which, when floated in water, showed the interlobular vessels, with parts of two or three hepatic lobules hanging around them. The cavity was thoroughly washed out and drained by a large glass tube sheathed with rubber. The wound was packed with iodoform-gauze, and dressed antiseptically.

The after-treatment of the case was very tedious. In spite of the large drainage-tube, the thick, glairy pus flowed but slowly, and it was found necessary to introduce two tubes, side by side, and irrigate the cavity through them. This acted much better, and the case progressed fairly favorably for three or four weeks, when it was resolved to enlarge the opening to treat the cavity by direct swabbing with sponges. This was done on October 31st, and the recesses of the cavity were gently and thoroughly curetted and swabbed until they were as clean as a healing ulcer. During the curetting the bleeding was very slight and never interfered with a perfect view of the cavity. The cavity was then packed with iodoform-gauze. Still, in spite of careful dressing, no improvement resulted. A copious glairy purulent discharge returned, and the patient contracted a persistent and troublesome diarrhea, which caused great emaciation. He slowly but surely sank, dying on January 7, 1893.

CASE II.—Adolphe B., aged sixty-three, a native of France, who had lived in Galveston for three years, was admitted under my care on February 18, 1893, complaining of pain in his abdomen. He was a man of slow intelligence, and little could be elicited either as to his previous history or as to his present condition. He complained vaguely of pain in the right side of the abdomen, but could not

[1] Read before the Southern Surgical and Gynecological Association, at New Orleans, 1893.

definitely locate it. A large reducible inguinal hernia was present on the right side, but this evidently had no bearing on the case. The temperature was of a remittent type, without rigors, reaching in the evening 102.8°. Inquiries were made as to malaria, and the blood was several times carefully examined, but with negative results. The pain still continued, and in the course of some seven or eight days declared itself more definitely in the lower part of the right chest. Examination of the lungs revealed nothing. There was no increase of liver-dulness, either upward or downward, and no tenderness on pressure over the right lower costal zone. The patient denied ever having had dysentery, and at this time there was no evidence of it; but later on, when the diagnosis was certain, I learned that he had been treated for amebic dysentery during the previous summer.

The temperature and pain still persisted, and in a little time definite physical signs became apparent. The right lower costal arch became fixed, not moving with respiration; it bulged somewhat, but not perceptibly more than the costal arch of another thin, healthy patient who was examined for the sake of comparison; but an important sign appeared in a spot of edema in the anterior part of the seventh intercostal space. The needle of an aspirator was inserted at this spot, and when at a depth of one and a half inches pus was obtained. This was thick and curdy, and contained numerous amebæ possessing active movements. Operation was performed on the following day, the patient being under the influence of chloroform.

I made a four-inch incision along the line of the seventh intercostal space, having its center over the edematous spot. This was deepened, and the anterior extremities of the seventh and eighth ribs and parts of their costal cartilages were excised, the pleural cavity being opened in the process. No retraction of the lung occurred, but the upper surface of the diaphragm projected into the wound. An incision parallel to the skin-incision was now made through the pleural covering of the diaphragm, and this was raised up with the handle of a scalpel and stitched accurately to the parietal pleura, thus shutting off the pleural cavity from that of the wound. The diaphragm was now incised, and a few strokes of the knife revealed adhesions between its under surface and the convex surface of the liver. A trocar and canula were thrust into the abscess-cavity, and a scalpel passed along the trocar, making an opening into the abscess capable of admitting two fingers. The pus, which was thick, flowed slowly through the opening. About fifteen ounces of purulent fluid were evacuated, which contained masses of liver-substance and myriads of amebæ. The opening was enlargd carefully until a sponge was inserted, by means of which every crevice was thoroughly cleansed. Two large, long, glass drainage-tubes, sheathed with rubber, were inserted into the cavity, and the operation-wound closely packed with iodoform-gauze. The effect of the operation was immediate, and the patient soon recovered from his collapsed state. The cavity was irrigated continuously with boric-acid solution from the first, and there was never any trouble with the apparatus.

On the fifth day after the operation, as the pus that came away still contained living amebæ, I substituted a solution of quinin sulfate (1:1000) for the boric acid. The effect was marvellous: the temperature fell, remaining practically normal thereafter; the pus diminished in quantity, and for a few days contained dead amebæ, but after this what little pus was discharged contained no amebæ. The wound healed, and the patient is now entirely cured.

The diagnosis of hepatic abscess may be the easiest possible, or beset with numerous difficulties. Occasionally we can only suspect its existence from such symptoms as pain and elevation of temperature, the other signs being bulging of the lower costal zone and dyspnea; enlargement of the liver may be imperceptible, even to the most accomplished diagnostician. It is in the latter cases that most of the difficulty of diagnosis arises, and it would be better in cases in which there is persistent elevation of temperature and pain in the region of the liver, if the lungs are free from disease, to proceed to puncture of the liver with an exploring-needle. Early and complete exploration is a harmless procedure, and would be the means in many cases of discovering abscess-cavities before they had attained a great size. But this exploration is occasionally fallacious, for an abscess-cavity of fair size may be present and puncture will fail to detect it. This has often occurred, and is usually due to one of two reasons:[1] either because the contents are too thick to run through the needle, due to caseation of the pus, or due to the naturally thick nature of the pus in the early stages of amebic abscess, or[2] the cavity has been missed by the needle. This occurred in Quénu's case;[3] the liver was exposed by an abdominal section, and explored in all directions without finding pus. A few days afterward the autopsy revealed an absces-cavity containing two liters. Even when pus is discovered by the aspirator, the diagnosis from other inflammatory affections in the neighborhood, such as "basal pyothorax" and "subphrenic abscess," may be difficult; and although in the majority of cases by careful attention to detail we can avoid such mistakes, still, occasionally, even in the hands of skilled diagnosticians, such faults have occurred.

The physical signs of the three affections are very similar, and in many cases those of subphrenic and hepatic abscess are identical. Careful microscopic examination of the pus will sometimes clear up a

[1] Dabney: Study of Hepatic Abscess. American Journal of the Medical Sciences, No. 244, p. 144.

[2] Councilman and Lafleur.

[3] Quénu: Société de Chirurgie, 1891. Quoted by Leblond: Abcès du Foie. Paris, 1892.

doubtful case, as the presence of liver-cells is always conclusive of hepatic abscess.

If pus be discovered, and its hepatic origin found, the next question that presents itself to a practical surgeon is as to operative interference.

Now the presence or absence of adhesions of course makes a great difference in the immediate mortality, for, if present, there is no danger of infection of either pleural or peritoneal cavity. Adhesions can never be diagnosticated with absolute certainty, but there are certain signs that, when present, render it extremely probable that they exist. These are: the presence of edema in the abdominal or thoracic wall; absolute fixation of the liver to the parietes, as shown by its non-descent during inspiration; and the presence of pus at a small depth from the surface. Nevertheless the absence of adhesions ought not to influence a surgeon in the slightest degree as to the propriety of speedy evacuation of the abscess-cavity. One knows the rapidity with which some of the abscesses form, and their liability, after reaching a certain size, to burst into various cavities and organs. Therefore, as even twenty-four hours may be too long a time to wait, no surgeon should hesitate to proceed to evacuation because no adhesions exist. It seems to me an axiom that "in abscess of the liver, whenever the diagnosis of pus is made, the only proper treatment is by early and large incision."

On reviewing the older methods of operation, it appeared to me that they group themselves into two main divisions: 1. Those in which the abscess-cavity was treated by aspiration, or a modification of this in which various forms of trocars and canulæ were employed. 2. Those in which a more or less free incision was used.

In considering the first class, we are necessarily struck by the fact that aspiration has been credited with many successes. This is, of course, not surprising, as it is the result of experience that aspiration of abscess-cavities elsewhere has also resulted in some successes; but, because we get an occasional cure by aspiration, does it follow that this must necessarily be the proper method? Do we follow such a line of reasoning in tuberculous cavities, and in pyothorax? When one considers the thick character of the pus in most hepatic abscesses, it can only be a matter of wonder that aspiration has been as successful as is reported. The introduction of a large trocar and canula is less objectionable, but even here we run a great risk, for although for a time the sides of the puncture press closely upon the canula, and prevent extravasation, in a short time pus may escape alongside the canula and infect the peritoneal cavity. To avoid this contingency, Macleod[1] arranged an ingenious apparatus whereby the canula was withdrawn and a rubber-drainage tube, tightly stretched, left in its place. The drainage-tube, which had side openings only at the inner end which lay in the abscess-cavity, was released, and resuming its normal diameter completely filled the channel previously occcupied by the canula; the rubber pressed on the sides of the wound, and prevented any extravasation into the abdominal cavity. This operation has been very successful in Macleod's hands, and is certainly the best of its class.

In the second class of operations, in which an incision was employed, we find many curious methods, some of them carefully guarding against serous infection, others blindly ignoring all surgical principles. Recamier[1] opened the abscess in two stages. His incision went through all structures as far as the parietal peritoneum; then, packing the wound, he waited until adhesions had formed, when the abscess-cavity was opened. Begin[2] cut through the parietal peritoneum; and then, placing an antiseptic plug in the wound, waited until adhesions had formed around the opening. Another crude method was to incise down to the parietal peritoneum, and then to complete the process gradually by caustics placed in the wound. Adhesions formed, and in many cases the abscess opened spontaneously.

Little[3] planned an operation, the chief merit of which consists in its boldness. Having determined the presence of pus, a bistoury was passed along the needle of the aspirator, and, in defiance of anatomic conditions, a free opening was made, through which the abscess was evacuated. The number of successes obtained by this method is marvellous, and can only be explained by the presence of adhesions in the majority of the cases operated on. Defontaine[4] found five cases in which this method had been used and in which it was proved that no adhesions existed. Of these, three died, the cause of death in two being peritonitis. He said, in reviewing this method, that a single death from this cause ought to be a death-blow to the operation. The more scientific operations are of recent date, and, like those for the radical cure of hernia, depend more on anatomic knowledge and surgical skill than on chance. Whether the abscess lies under the thoracic or abdominal walls, the incision is made methodically through all of the layers, and each cavity is dealt with in such a manner as to shut it off from all chance of infection.

I. *Cases in which the enlargement of the liver is abdominal, and no adhesions exist.*

For a long time it was doubted whether, with any

[1] Macleod: Brit. Med. Journ., 1891, vol. ii, p. 1345.

[1] Recamier: Leblond, loc. cit., 89.

[2] Begin: Gazette des Hôpitaux, p. 535.

[3] Described by Ayme: Archives de Méd. Navale, 1880, vol., xxxiv, p. 525.

[4] Leblond: Loc. cit., p. 98.

degree of certainty, the liver could be stitched to the abdominal walls, but when the fact was demonstrated a way was at once opened for the treatment of both hydatid cysts and hepatic abscesses. Horner[1] first performed the operation, and was soon followed by Bouilly; and then McLane Tiffany conceived the idea of detaching the edges of the parietal peritoneum for some distance, and uniting them to the convex surface of the liver. If this separation is done with care, the two edges of the peritoneum hang like a curtain, and can be sutured to the liver, their length of pendulousness allowing free respiratory movement without dragging on the stitches.

When the hepatic enlargement is abdominal, we open the cavity and expose the liver. The organ is carefully examined and inspected, and in one case[2] the presence of a second abscess was determined. The peritoneum should be detached from the edges of the incision for some distance, and united by points of suture with the surface of the liver, leaving a sufficiently large space for the proper evacuation of the abscess-cavity. The sutures require careful manipulation, and there should be at least two concentric rings. The peritoneum should also be long enough to allow for the respiratory movement of the liver without undue dragging on the sutures. Occasionally the abscess has been evacuated before applying the stitches. In this case the sutures should pass through a fair thickness of liver-wall, but should not touch the abscess-cavity. It is, however, better, unless there are urgent reasons to the contrary, not to open the abscess-cavity immediately, but to aspirate and allow time for adhesions to form before proceeding to thorough evacuation.

II. *Cases in which the enlargement of the liver is upward toward the thoracic region.*

In these cases the transpleural incision is undoubtedly the best. First proposed in 1886, by Knowsley Thornton,[3] it has since been successfully carried out by many operators.[4] Thornton excised the seventh and eighth ribs, opened the pleural cavity, elevated the diaphragmatic pleura and stitched it to the parietal pleura, incised the diaghragm, and opened the liver-abscess without taking any precautions against peritoneal infection. Terrier planned what must be considered a perfect operation. An incision eight centimeters long was made in the eighth intercostal space, the ninth rib resected for an extent of four centimeters, the pleural cavity opened, and the diaghragmatic pleura stitched to the parietal pleura. The diaphragm was incised and the lips of the wound united to the liver by silk sutures, thus forming a channel passing from the surface of the body which had no communication with either pleural or peritoneal cavity. The abscess was then opened with a bistoury and drained. This method of Terrier[1] is undoubtedly the most perfect. It has a faultless technique, and has yielded good results.

Some objections may be raised to this transpleural method on account of the immediate danger of collapse of the lung, and the more remote danger due to infection of the pleural cavity. Collapse of the lung is not likely to occur. It was not noticed in Terrier's case or in my own, and further, in many wounds of the chest the lung fills the pleural cavity, in spite of a large opening. Even if collapse did occur, I think it would be temporary only, unless fluid collected in the pleural cavity. The later dangers, such as pyothorax and pneumonia, depend upon the completeness with which the technique of the operation is carried out.

In conclusion, I should like to mention a few points on the treatment of the cavity after the contents have been successfully removed.

It is often exceedingly difficult to obtain free drainage, even when large tubes are employed. In some cases even swabbing the walls of the cavity is ineffectual, and these cases are practically hopeless, owing perhaps to inherent tissue-weakness. I tried curetting in one of my cases, and although I removed, as I thought, all necrotic tissue, still in a few days the cavity was as bad as before. Continuous irrigation often affords a means of efficient removal; but the tubes have an aggravating habit of being blocked, necessitating frequent changing and cleaning.

Irrigation with a solution of quinin sulfate—1:1000—was in one of my cases remarkably successful, and although the improvement may have been a coincidence, and not a *post hoc ergo propter hoc*, I think that in cases of amebic dysentery at least it deserves a fair trial.

[1] Leblond: Loc. cit., p. 102.

[2] Thornton: Quoted by Greig Smith. Abdominal Surgery, 1889, p. 581.

[3] Thornton: British Medical Journal, 1886, vol. ii, p. 901.

[4] Leblond: Loc. cit., p. 113.

THE INTERRUPTED HIGH-VOLTAGE PRIMARY, OR MIXED, CURRENT.

BY GEORGE J. ENGELMANN, M.D.,
OF ST. LOUIS.

THE interrupted high voltage primary or mixed current is one of the results of experiment with my new independent interrupter, devised for my faradic apparatus, but to be used also in connection with any galvanic and faradic apparatus; it has proved to possess an individuality peculiar to itself and of great physiologic efficiency, so that I am convinced of its therapeutic value and present it for the consideration of the profession.

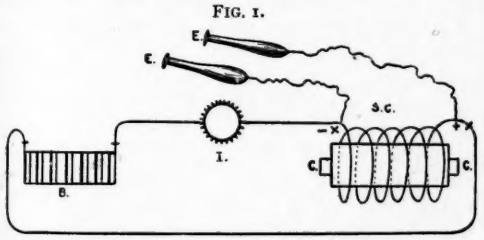
[1] Terrier: Observ. par Dagron, Soc. Anat., 1890, p. 44; Leblond, loc. cit.

This current, which I term the *interrupted high-voltage primary*, or *mixed*, current, is obtained by the interruption of the galvanic flow passing through the secondary coil of the faradic apparatus, and is taken from the terminals of that secondary coil, here used as a primary, which is of higher voltage, of many more winds and greater resistance than the ordinary primary in medical induction-instruments.

The current so obtained is hence not precisely identical with the primary faradic, and may properly be termed a *mixed* current, if not an *interrupted* primary of higher voltage.

A well regulated, controllable interruptor is above all necessary.[1] Any galvanic battery may be used; one pole is connected with the interruptor, and through this to one of the terminals of the secondary coil of the faradic apparatus[2] (the binding-post from which the secondary current is taken); the other pole of the galvanic battery is connected directly with the remaining terminal of the secondary coil, and with these same two terminals the rheophores carrying the electrodes are connected.

FIG. 1.



B. Galvanic battery. I. Interrupter. S.C. Secondary coil. −X and +X. Terminals of coil. C. Core and primary coil. E. E. Electrodes.

A current so produced combines the characteristics of the galvanic and the induction flow; it has the same galvanometric quantity and the same chemic effect as a simple galvanic current of the same intensity, or, from the same number of cells applied in the same manner *plus* the voltage and the physiologic effects obtained from the winds of the coil; coil and patient being connected in multiple, the resistance is diminished and the current increased, but increased in voltage rather than ampèrage—converted, I may say.

The *physiologic effects are peculiar*, and differ materially from those of any other form of electricity in medical use, the current combining, as it were, the quantity and chemic effect of the galvanic with the voltage of the faradic; the effects resemble most nearly those of the primary faradic, but are more powerful and indicative of greater quantity, most marked in their *action upon muscular fiber*, which is affected by this *as by no other form of electricity.*

A variety of effects are produced by the use of different current-intensities and different coils; yet while this current will undoubtedly be of distinct value in certain nerve-lesions, it will prove pre-eminently a *muscle*-current, as it contracts the muscle most perfectly, acting upon every fiber in the most marked manner, like a powerful interstitial or intercellular massage.

The character and effect of the current depend upon the following elements, which must be noted, as it is by a variation in these factors that the varying therapeutic results are obtained:

1. The number of cells or intensity of the primary battery-flow.
2. The resistance and number of winds of (the secondary) coil.
3. The number of interruptions.
4. The position of the secondary coil in reference to the core and primary.
5. The character and location of the electrodes.

1. The number of cells used or the intensity of the primary battery-flow determines the galvanometric measure and chemic effect; these being the same as from an ordinary galvanic current without insertion of the coil and applied in the same manner, it is evident that the character of the current must in a measure depend upon this factor; but as voltage and induction-effects are prominent, the number of cells to be employed is determined, not by the chemic effect to be produced, but by the coil to be used. Only one cell can be employed in connection with a short coil, the number of cells being increased with the resistance and number of winds in the coil; but more than ten or twelve cells, if in good condition, can hardly be used to good advantage, even with the long fine coils, at least on healthy tissues.

2. It is the coil preëminently which determines the character and effect of the current,[1] the resistance and

[1] For slow interruption, simple muscle-stimulation and massage, the interrupter ordinarily connected with a complete galvanic apparatus may be used, or, for rapid interruption, a commutator attached to the shaft of a motor, but precision is necessary, and ere long the perfected instrument, which has been devised and constructed by Messrs. Waite & Bartlett in accordance with my suggestions, will be in the hands of the profession, and accurate work, record, and comparison of results will then be possible.

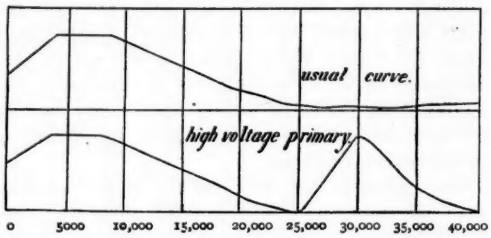
[2] Not every faradic apparatus will answer, as most instruments have but a single coil and this may give a very unsatisfactory mixed current. To obtain the various therapeutically serviceable phases of this current an induction-apparatus, with a graded set of coils, is necessary; but if it has but one secondary coil it should be of approximately 1800 W. and 13 ohms R., or of about 800 feet of 22 wire, as this develops the most generally useful form of the interrupted high-voltage current, the painless muscle-permeating current.

[1] In speaking of *the coil*, I invariably refer to the *secondary* coil of the faradic apparatus, in position on the instrument, *used as a primary* in this circuit.

number of winds materially varying its physiologic value, but not in precisely the same manner as when used as a secondary in the faradic current proper. The faradic current from a coil of high voltage, or many winds, has *least* quantity, whilst the mixed current from this coil is of necessity one of *greatest* quantity.

The lower the resistance of the coil and the less the number of winds, the more powerful the induction-effect and the less the quantity of the primary galvanic force to be employed: No. I coil (Engelmann), 0.8 ohms R., 528 winds, has an effect, both motor and sensory, too powerful for therapeutic use, even with one single cell of the weakest Leclanché.

FIG. 2.



No. II, the medium coil, 13 ohms R., 1750 winds, with one cell from any galvanic battery, produces the most satisfactory, deep, muscle-contracting currents, permeating every fiber. This is, *par excellence*, the coil which gives value to the current, and it is remarkable how completely it can be confined to a distinct muscle by the location of the electrodes; whilst permeating its fibers it does not seem to radiate beyond.

For the developing of the most satisfactory results, the number of cells used must be increased with the resistance and number of winds in the coil:

	Feet.	Wire.	Winds.	Number of cells found to be effective.
For a coil of	1500	36	4,000	4 to 5
" "	3000	36	7,000	7
" "	4500	36	10,000	9 to 11

By longer coils muscular contractions are likewise produced; but these are more painful, and the chemic effects of the galvanic current begin to assume prominence; these should prove efficient for other therapeutic purposes, when more marked galvanic effects are called for.

3. Change of relation between the secondary coil and the primary coil and core, *i.e.*, the moving to and fro of the coil on the scaled slide, varies the intensity of physiologic effect. This variation of intensity is similar to that of the primary faradic, but differs in some features; if coils of low electromotor force are used, the intensity of physiologic effect is increased by a sliding out of the coil away from the core; this is most marked in the coil of fewest winds, coil I, 528 winds; somewhat less so, but still very decided, in coil II, 1750 winds, 13 ohms R.; coils of higher E. M. F., longer; fine-wire coils, on the contrary, *weaken* the current-effect by the drawing out of the coil, or the moving away from the core; this is true, even of the coil of 1500 feet, or 4000 winds, and of the muscle-coil of fine wire in multiple, 6500 winds, and only 4 ohms R.

The true primary coil of the apparatus is ignored in these experiments, and its terminals are not connected. When this is done it acts as a damper, like the copper tube of Duchesne, to weaken the current.

4. The number of interruptions, or the rates of vibration, control the physiologic effect of this current, as they do that of the faradic, whilst the chemic and galvanometric action is affected but little and that in a contrary sense.

Interruption and alternation affect the physiologic action of this current in the same manner, but I shall speak only of interruption, pure and simple, as it is the interrupted primary which will prove of greatest therapeutic value, this being more agreeable, less painful and harsh than the alternating, and equally, if not more, efficacious as a muscle-contractor, so that the alternating primary will only be used when it is of importance that all chemic action be avoided. Both currents, interrupted and alternating, will respond to certain therapeutic indications; but as a simple muscle-contractor the more irritating and disagreeable alternating will find little favor as compared with the interrupted current; both, however, respond in precisely the same way, as regards physiologic effect, to variation in the rate of interruption.

Other conditions being equal, the same number of interruptions and alternations produce the same effect, *i. e.*, 10,000 interruptions have the same comparative effect as 20,000 alternations upon the current. As in the secondary faradic, the effect of the current increases with the rapidity of interruption from 1 to 2500 or 3000 per minute, and, after attaining a maximum effect, decreases with increased rapidity of interruption until a rapidity is reached with which all sensation ceases. Though the galvanometric effect is unchanged, the chemic effect increases; the more intense the current the greater the number of interruptions necessary to completely annul its effect.

Coil I, heavy, with one cell, causes powerful and painful contractions, too violent for general use with the ordinary rate of interruption; yet it ceases to have any effect, or to be felt, with 14,000 interruptions per minute (this when full in, over core, with small sponge electrodes to upper and lower

arm, the effect depending greatly upon the moisture of the electrodes and the pressure upon them).

The 10,000-wind coil, 4500 feet of 36 wire, 11 cells, sponge electrodes to upper and lower arms, ceases to be felt at 25,000, whilst if only 7 cells are used, the same result is accomplished by 20,000 interruptions per minute.

The general law mentioned, of increase of effect with increase in rapidity of interruption, then decrease with still greater rapidity, holds good with one curious exception, true of the secondary faradic, as it is of the interrupted, or alternating high-voltage primary; and this interesting phenomenon, which merits a more thorough discussion elsewhere, I must here at least note: it is that currents from certain coils, as far as I have observed, from 5000 to 10,000 winds, 36 wire, under certain conditions, after passing that rapidity of interruption at which they cease to be felt, *reappear* with greater rapidity, again *attain the previous maximum*, to again lose all effect with still greater frequency of interruption. In place of the simple rise and fall, there is a second shorter and additional curve of rapid rise to the previous maximum and fall to zero.

The 36-wire coil of 10,000 winds, with 11-cell primary galvanic force, ceases to be felt with 25,000 interruptions, then reappears, regains its previous efficiency at 30,000, and again weakens as the interruptions grow more rapid, to completely fade away as they attain a speed of 40,000 per minute; if fewer cells are used with the same coil, precisely the same phenomenon is observed, the same effects being produced by lower rates of interruption as the current is weaker.

5. That the character of the electrode, which determines penetration and surface-resistance, influences this current, as it does both galvanic and faradic, need hardly be mentioned; material, size, degree of moisture, location, and pressure upon the electrode, all serve to vary the sensation and effect of the current, and must be considered as determining factors.

This interrupted, high-voltage primary current possesses an individuality which must secure it a distinct place as a therapeutic agent; by blending the quantity and chemic action of the galvanic with the voltage and mechanical effects of the faradic we are enabled to produce peculiar effects; yet both are so modified that the resultant differs from a simple combination of these two forms of electricity. It differs from the painful interrupted or alternating galvanic as it does from the ordinary faradic, the secondary or induced current, and it will be resorted to when deep, penetrating effects are desired and when permeating muscle-currents are indicated; it will act, I believe, in those cases in which faradization fails. No other current, with such penetrating power, can be so localized and grasp every fiber of a muscle as does this.

Therapeutic effects I have not, as yet, been able to test, and cannot speak of its action upon muscle in central and peripheral lesions, but physiologic experiment indicates the powerful influence of this current, from proper coils, upon contractile tissue, and it is in this direction that investigation must first proceed.

In conclusion, a word of caution to the operator: Care must be exercised in the selection of battery-force and coils until a knowledge of the current and its effects is obtained. It is best to begin with the use of the lowest current-intensities, or the fewest galvanic cells which will take effect through the coil employed, or to use the number of cells here indicated as suitable for the various coils, varying the current by the pushing in or out of the coil, as the case may demand; when familiarity with the current has been acquired, this may be varied by variation in the galvanic flow for certain effects. It must be remembered that coils of low E. M. F., heavy coils of few winds, must be *drawn out* to *increase* the physiologic effect, whilst coils of higher E. M. F., the long, fine coils, vary less and in a different manner; these *weaken* by *drawing out*. It is also important to remember that the current-effect increases more distinctly than that of the faradic, with increase in the rapidity of interruption up to 3000 per minute, and, after attaining a maximum, gradually decreases with increased rapidity, decreasing in proportion to the current-intensity; the stronger the current the greater the number of interruptions necessary to reduce it.

A note must be made of the peculiar effect of fine-wire coils of from 5000 to 10,000 winds, which again attain a brief maximum intensity with increase of interruption after having been obliterated by a certain rapidity.

It is evident that this current is one easily obtained if a proper interrupter and a coil of suitable construction are available, as a single galvanic cell, Leclanché, Gonda, dry or red acid, will answer for use with the muscle-coil, the galvanic battery, or a larger number of cells, being needed only with the longer coils, which are not as generally useful.

I trust that an earnest trial will be given the interrupted high-voltage primary, which merits a place in our therapy, if only for its permeating muscle-effects, and I am convinced that therapeutic use will soon demonstrate the greater range of this efficient current.

The International Medical Magazine will hereafter be edited by Dr. H. W. Cattell, under the supervision of Dr. John Ashhurst, Jr., and Dr. James T. Whittaker.

SUPRA-PUBIC CYSTOTOMY.[1]

BY B. W. TAYLOR, M.D.,
OF COLUMBIA, S. C.

I. FOR VESICAL CALCULI.

IT appears that supra-pubic cystotomy was first performed by a French surgeon, Peter Franco, in 1541, upon a boy who had a large calculus, very prominent above the pubes, but which could not be pushed down in the bladder so as to be felt in the perineum. When we take into consideration that the bladder in the child is much higher than in the adult, we will perceive why the calculus was so easily felt above the pubic bone. Notwithstanding the success attending this case, the operation was not favorably thought of by the profession, and it was not until 1580 that François Boussett again revived this operation and saw the necessity of distending the bladder with a bland solution and compressing the penis to prevent the escape of the injected fluid. He also retracted and protected, with the forefinger, the peritoneal fold during the incision of the bladder. Thus two important steps in the operation were discovered, and from that day to this these precautions have been carried out.

Fr. Côme, who lived about 1779, repeatedly performed this operation with success by passing into the bladder a sound with a concealed dart, the finger then being introduced into an incision made in the abdominal wall just above the pubes, and the sound being felt against the finger, the dart was protruded. A bistoury was then passed along the dart as a guide, the opening was enlarged and the finger introduced into the bladder. Côme also recommended the perineal incision for the purpose of drainage in cases of the supra-pubic operation.

The London surgeons also performed this operation successfully, but the danger of wounding the peritoneum, which was much feared in those days, most probably caused the operation to be given up.

In 1878 Dr. Garson discovered that by distending the rectum with an inflated rubber bag and at the same time distending the bladder with fluid, the latter could easily be opened without endangering the peritoneum, which would thus be about two inches above the pubic bone.

At first this discovery did not seem to favorably impress the profession; but several years afterward Prof. Petersen, of Kiel, performed several operations and showed the advantages of rectal distention.

We have thus traced the evolution of the operation as now performed, antiseptic precautions, of course, being rigidly carried out.

We will now compare the results of the several operations for the removal of stone from the bladder.

[1] Read by title before the Southern Surgical and Gynecological Association, November, 1893.

The mortality of litholapaxy, as given by Sir Henry Thompson in 1890, was a little over 3.5 per cent.; and by Keyes in 1885 as 3.7 per cent.

It appears at present that litholapaxy gives better results than any other operation for stone, but it requires more skill and experience, and the instruments required are expensive. Litholapaxy will therefore seldom be performed except by specialists.

In perineal lithotomy the possible complications that may occur during the operation, but which are avoided in supra-pubic lithotomy, are:

1. Failure to enter the bladder, especially in children.
2. The incision of the body of the bladder in adults with large calculi.
3. Wounding the rectum.
4. Rigidity of the neck of the bladder.
5. The enlarged lobe of the prostate interfering with the seizure of a stone in an abnormal position.
6. Failure to find the stone.

The possible after-complications of perineal lithotomy that are avoided in supra-pubic lithotomy are:

1. Retention of urine.
2. Epididymitis.
3. Orchitis, due to wounding the seminal ducts, or subsequent inflammation near their orifice.
4. Incontinence of urine, which McGuire says never occurs in the high operation.
5. Impotence and sterility.
6. Terminal fistula.

The complications and accidents peculiar to supra-pubic lithotomy are:

1. Rupture of the bladder during preliminary distention, which I think must occur but rarely with skilled operators.
2. Infiltration of the wound from bad drainage. As to this, McGuire says: "It is more complete than in drainage after section through the perineum. If hemorrhage occurs it can be seen from whence it comes and it can be more easily controlled than in perineal lithotomy."

The operation is simple and far less dangerous than any cut in the perineum. If a fistula is left it is above the pubes and is not constantly leaking. Lydston mentions a case in which a tube was introduced in the bladder through the perineum and another through the supra-pubic opening, drainage taking place where there was the least resistance, namely, above, and not one drop of urine passed out through the perineum.

Cabot lays down the following cases as unsuitable for litholapaxy and perineal lithotomy:

1. Large and hard stones.
2. Stones with a nucleus of a foreign body too hard to crush.
3. Encysted stone.
4. Ankylosis of the hip.

5. False passage of the urethra.

Up to the present time, although supra-pubic lithotomy has so many advantages over the perineal section, yet the published statistics give the latter a lower mortality. This, I think, is in part due to the unwillingness of surgeons to give up lateral perineal incision, which has given such results as Freyer has achieved, of operating on 143 boys without a death. Assendelft, a Russian surgeon, has performed supra-pubic lithotomy on 102 patients, varying in age from five to twenty-eight years, with 2 deaths. These figures, of course, do not give the mortality of patients of a more advanced age, for whom the death-rate is necessarily greater.

I will now give the histories of two cases I lately operated on.

CASE I.—J. W. T., nineteen years of age, had attacks of renal colic for six years. About two years before the operation he was very ill for several days, when a calculus passed into the bladder and a free discharge of pus from the penis. It was a short time after this that symptoms of stone in the bladder developed. The supra-pubic operation was performed with the usual technique. The peritoneal fold was lifted up with the finger. The rubber tubes placed in the bladder were removed early, as they caused much irritation. Some urine passed from the penis in eight days, the greater part being passed through the wound until the eleventh day, when the incision closed up. There was no rise of temperature.

CASE II.—L. A. W., forty-three years of age, had attacks of renal colic for seven years, some of the stones being voided with the urine. Four years before the operation the first symptom of stone in the bladder showed itself. The man was operated on by the supra-pubic incision. The peritoneal fold was never visible. He had no pain or rise of temperature after the operation, and was allowed to go to his home, twenty-five miles away, in twelve days. He urinated naturally in twenty days, and in thirty days the wound had healed entirely. He has been well ever since.

In appropriate cases I would advise closing the bladder at once by the interrupted Lembert suture of fine silk, the incision being held close together by a suture of silk at each end of the wound in the bladder. These stitches, of course, must not penetrate the mucous membrane of the bladder. A small drainage-tube is introduced at the lower part of the parietal wound, which is then closed. Remove the tube in forty-eight hours. The urine is drawn off by a soft catheter, if necessary, no other provision for its removal being required.

II. FOR ENLARGED PROSTATE.

The operations of Gouley and Mercier for incising or removing a portion of the bar in senile enlargement of the prostate without opening the bladder has been given up by most operators on account of its dangers and the uncertainty of the results.

The object of all operations performed in cases of hypertrophy of the prostate is to effect free drainage and give the bladder complete rest. Then, again, the obstructing portion of the prostate is removed, so that, when the wound heals, the patient can again perform micturition normally.

Now, when we drain the bladder through a perineal wound, the urgent painful symptoms are relieved only so long as the opening remains unhealed. When it closes, the same symptoms, after a time, return. This operation fails to relieve the existing obstruction in a large number of cases. McGill, of Leeds, says that in only three among twelve cases, in which he operated by the supra-pubic method, would it have been possible to remove the growth through the perineum.

McGill was the first to show the great advantage of the supra-pubic operation for removing prostatic obstruction, and the series of cases published by himself and Keyes, of New York, has caused the operation to be considered superior to the perineal section.

McGill says "that the severity of the symptoms in a case of hypertrophy of the prostate bears little or no relation to its apparent size, as felt through the rectum; and it is also well known that a considerable number of men of fifty-five years and upward have prostates of abnormally large size, though of these only a certain proportion, say 50 per cent., suffer from urinary symptoms. This strange difference depends on the point at which the organ is enlarged. Prostates projecting toward the rectum and perineum cause no urinary trouble, while severe symptoms may supervene when the prostate, on rectal examination, is apparently of normal dimensions."

When, therefore, we consider that, before opening the bladder, it is impossible to say what is the condition of the entire vesical projection, the perineal operation appears to be most uncertain in its result.

I shall not describe the various prostatic growths, but will refer to only one variety, as the case I report was of that character, viz., a uniform circular projection, surrounding the internal orifice of the urethra. It surrounded the urethra like a collar and projected for a variable distance into the bladder. McGill says that, when the bladder contracts on its contents, the contained fluid is forced on the projecting prostate and the urethral orifice is closed. The mechanism is the same in all varieties except one. The patient, finding he is unable to relieve himself, ceases to strain and the urine flows away in a full stream. After a time the bladder still contains urine, but no more can be forced out; then begins self-catheterism, which, in many

cases, is all that is needed. McGill says that when in these cases an operation is demanded the supra-pubic method is superior to the perineal for the following reasons:

1. It is more generally applicable.

2. It can be performed with greater precision and completed with greater certainty.

3. It insures complete and most efficient drainage.

4. It is equally safe, although there are no statistics available.

As to the final results, we may say that even in cases in which the prostatic retention was of long duration, there are many patients in whom the bladder has, since the operation, been able to expel its contents. This has occurred even in cases in which self-catheterism had been practised several times a day for years.

Then, again, there are cases in which it is necessary to keep the supra-pubic incision open for the rest of life. This fistula, when reduced to the size of the natural urethra, does not permit leaking or dribbling of water, unless the bladder is allowed to become too full. Dr. McGuire wrote me the following with regard to the after-treatment of the case I will later report:

"In the formation of an artificial urethra for prostatic obstruction, I let the wound heal until it admits a No. 8 catheter, American scale; then a plug should be introduced into the tract and retained there by a band passed around the pelvis. When the patient wants to relieve himself the plug is removed and the man voluntarily expels the urine through the opening. Immediately afterward the plug is replaced and worn until the desire to make water returns. It is not necessary that it should be worn constantly, if it creates any irritation, but I have seen the artificial tract close up in a night.

"To siphon the bladder out with a catheter will produce atrophy of the bladder; and unless this exists before the operation, it is not necessary to use a catheter or any tube to draw off the water. He ought to keep open, the rest of his life, the artificial urethra."

I will now give the history of a case:

Mr. R., aged seventy-six years, has had piles for forty years. About six years ago he had retention of urine and was sick six weeks, the urine being drawn off by catheter a part of that time. He then remained comparatively well for a year, when trouble again occurred. It was not until three years ago that it became necessary to draw off his urine daily. During this time he has twice had retention of urine, with painful distention of the bladder. It was found impossible to introduce a catheter until the bladder was aspirated. The calls to urinate during the last three months have at times been as frequent as every hour, with straining and protrusion of the piles, which had to be replaced by the hand with a good deal of pain. For one month before the operation it was found necessary to keep a No. 8 silver catheter in the bladder most of the time, as it was impossible to use the soft rubber catheter, which he had up to that time introduced. For a long time he refused to be operated on, but as we expected almost daily that we would fail to introduce a catheter, he at last consented.

The bladder was opened by the usual technique and a small phosphatic stone removed. The collar-like protrusion of the prostate of the largest size was found to exist. After incising the prostate in four places the gland was removed by the fingers and the vesical mucous membrane remaining was cut off with scissors. As there was free bleeding a plug of iodoform-gauze, after Keyes' method, was attached to two threads, the one passing out through the urethra drawing the plug well into the prostatic urethra and tied over a similar plug at the external urethral orifice, and the other out through the supra-pubic opening. These remained for twenty-four hours, and were removed. The man showed every evidence of making a slow recovery until the ninth day, when fever with an unchecked diarrhœa set in, and he died on the eighteenth day after the operation. This patient was really worn out by his disease before the operation. His kidneys were seriously affected, mechanical obstruction to the passage of urine having ended in cystitis, ureteritis, and pyelitis.

Christopher Heath, in reporting an operation for stone by the high method, in which chronic cystitis existed, says that he applied to the lining membrane of the bladder a solution of silver nitrate, 20 grains to ℥j of water through a vulcanite speculum. This treatment almost immediately changed the alkaline and offensive urine to an acid and comparatively healthy secretion.

Now the question might be asked: Would it not be good surgery, in such advanced cases as this, for us only to make the supra-pubic incision and apply the solution of nitrate of silver to the lining membrane of the bladder and form a urinary fistula; then, when the patient has regained his strength and the cystitis has improved, to perform a second operation for removal of the prostatic growth? Under the circumstances would we not avoid making a fresh wound in a highly septic cavity and substitute a minor operation for a more serious one?

I have been induced to speak of this operation in order to popularize it, as I believe it is the simplest and best cutting operation for stone and the only operation for the removal of prostatic enlargement in two-thirds of the cases, as well as the only one by which tumors and ulcerations of the bladder can be properly treated.

Fehling, of Basle, has been elected Professor of Gynecology and Obstetrics at Halle in succession to Kaltenbach, recently deceased.

ORIGINAL LECTURE.

PIGMENTATION OF THE WHOLE SURFACE OF THE BODY, OCCURRING SUDDENLY DURING THE TREATMENT OF A CASE OF PSORIASIS; WARTY GROWTHS UPON THE PALMS AND SOLES, FOLLOWING THE INTERNAL USE OF ARSENIC.[1]

BY ALBERT E. CARRIER, M.D.,
OF DETROIT;
PROFESSOR OF DERMATOLOGY AND OF CLINICAL MEDICINE, DETROIT COLLEGE OF MEDICINE; DERMATOLOGIST TO HARPER HOSPITAL AND ST. MARY'S HOSPITAL.

THE case to which I wish to call your attention this morning illustrates three affections of the skin, two of which are of more than ordinary interest. Our patient is thirty-two years old, has the appearance of a man in pretty good health, is a carpenter by occupation, and has a good family history; one brother died at the age of twenty from a disease of the skin that, our patient tells us, had existed from the time he was six weeks old, and which covered the whole surface of the body with thick, white scales. When our patient was fourteen years old his scalp became affected with psoriasis, the lesions itching intensely; at sixteen he had gonorrhea, and has had a urethral discharge ever since. Various remedies were used for the scalp-disease, but without benefit until mercurial ointment was applied; this would keep the disease in check, but did not cure it; it was used for three years, when lesions of psoriasis developed on the body, and the mercury was stopped; six months later the man had an attack of rheumatism that confined him to his bed for nine months.

Three years before his attack of rheumatism he had a hard pimple on the dorsum of the penis that persisted for three weeks; at the same time the inguinal lymphatics were enlarged but not painful. A smooth white scar marks the site of the lesion of the penis. For his rheumatism he was sent to Mt. Clemens, Mich., and after taking the baths for six weeks (during which time he also took potassium iodid), his rheumatism and the cutaneous affection were both apparently cured. A short time after he stopped the baths the eruption reappeared on the body, and with it a chocolate color of the whole surface; so marked was this that he was taken for a mulatto, and on that account he was refused the rent of a house. The pigmentation gradually disappeared from the face, hands, and feet, but has continued upon the other portions of the body up to the present time. Viewing the patient from your seats his skin looks as though a mixture of pepper and salt had been thrown over it. There is no scaling except upon the dime-sized patches of psoriasis that are scattered over the belly, back, and on the inner surfaces of the arms. You will notice that where the psoriatic patches have disappeared their site appears very white in contrast with the pigmented skin; looking a little closer, we find that the discoloration has, all through it, white spots of normal colored skin, varying in size from a pinhead to a pea, and all circular in outline.

Anomalies in pigmentation are not uncommon; you see them in the yellow-brown spots of lentigo upon the face and hands, or in the larger and browner patches, the moth-patches, found on the face, breasts, and abdomen of pregnant women, or in those suffering some pathologic condition of the uterus or its appendages, or in severe cases of pruritus, due to scratching or following a prolonged congestion of the skin. Again, they occur as the remains of the lesions of certain skin-diseases, such as prurigo and syphilis. In most of these instances the pigmentation will disappear in a short time, and the surface covered is not very large. Pigmentation also occurs in some cases of chronic malarial toxemia and in abdominal tuberculosis.

Another cause is found in the local application of certain medicines, or the internal administration of drugs, such as silver nitrate, which in certain individuals produces a chocolate color of the skin that is permanent; arsenic is also followed in some persons by a staining of the skin. Discolorations also occur as a result of the absorption of the coloring-matter of some of the secretions, an example of which is jaundice, as a result of obstruction or of catarrh of the gall-ducts.

Two other diseases that are followed by pigmentation must be noticed, viz., syphilis and disease of the supra-renal capsules, known as Addison's disease.

In Addison's disease the bronze color is not always present; but when it is we find it most marked upon the face and hands, and it is also found upon the mucous surfaces. The disease is gradual in its onset and accompanied by symptoms of severe constitutional disturbance, as manifested by the asthenia, the weak pulse, the gastric symptoms, palpitation on slight exertion, and syncope—symptoms that are referable to the sympathetic nervous system—and the color gradually becomes darker, and is permanent. The disease tends to a fatal issue, death occurring within a few years.

The syphilitic coloring that I refer to is not that which follows the disappearance of a syphilid, but is itself a syphilid—the pigmented syphilid. This is a rather uncommon occurrence, and is seen oftener in men than in women; it is usually seated on the sides of the neck, but may cover larger surfaces, and misses the face and hands; it appears during the first few months of the disease, lasts for several months, and is very rebellious to treatment; it may also occur at a later period of the disease. The patches are circular in outline, yellow-brown in color, and do not scale.

The interesting facts connected with this case are: first, the sudden appearance of the staining, the whole surface of the body being covered in a few days; second, the length of time that it has lasted, now over eight years; and third, the large surface covered.

From the history of the case and the appearance of the patient we are not warranted in ascribing this pigmentation to Addison's disease; the man is in apparently good health; he has none of the constitutional symptoms of disease of the supra-renal capsules; and, more than all, he is alive; the chances being that, with Addison's disease, he would have died several years ago. Regarding abdominal tuberculosis as a probable cause, we are confronted with the same absence of characteristic symptoms; there has been no tenderness of the belly, no enlargement, no anemia, no debility; the family history shows no inherited tendency to the

[1] Clinical lecture delivered at St. Mary's Hospital.

affection, and the pigmentation of this disease is not so pronounced as in our patient, nor so generally distributed.

I do not think that it is the pigmentary syphilid, as it did not occur for over four years after he had the hard pimple on his penis, and he has never had any other manifestation of that disease, neither loss of hair, sore-throat, pains in the bones, eruptions of any kind excepting the psoriatic, and the lesion of the penis may only have been a psoriatic lesion.

Excluding all these diseases from a causative relation to the discoloration, we would probably have to call it a trophoneurosis, which in many instances is as clear as to say that a patient has liver-complaint.

Now examine the patient's hands and you find that the whole palmar surface is thickly studded with warty growths, from the size of a pinhead to that of a pea, hard, deep-seated, and painful; several of these lesions are on the back of the last phalanges also. The soles are the seat of similar growths. This condition has lasted for over two years, and in order to walk or work at his trade with any comfort, he is obliged to pare the growths with a razor. Two years and a half ago our patient began the use of Fowler's solution, which, in doses of from 5 to 10 drops, seemed to keep the disease in abeyance; he has continued to take the medicine until the present time. Six months after he began the use of arsenic the affection of the soles and palms began, and has remained until now.

Here, then, I think, is our explanation of the causation of the pigmentation and of the warty condition of palms and soles. He had probably taken arsenic before he ever went to Mt. Clemens, and the coloring was the result of the administration of that drug; he had also taken it for a long time, for the reason that the pigmentation is general, instead of its occupying the sites of old psoriatic lesions, which is the case when the color occurs early in the treatment. I am at a loss to account for its sudden appearance. I find, however, that this man's skin is very sensitive, that he is obliged to wear the finest underwear, that a slight injury to the skin is followed by a pigment-deposit; it may be that the constant bathing in the irritating waters of Mt. Clemens for so long a time was the determining cause.

Our patient seeks relief; he wants to get rid of his psoriasis, of his abnormal color, and of the affection of the palms and soles.

In the treatment of psoriasis arsenic stands at the head of all internal remedies; it probably cures (so far as cures can be expected, for all cases tend to relapse) more cases of the disease than all other drugs used, but it is contra-indicated in this case even if we had no pigmentation or warty growths. The contra-indicating symptom in the case is the pruritus; I never give the drug in this disease when itching is intense. I think we will give him increasing doses of potassium iodid, which has been highly spoken of in some cases of the disease. Local treatment, so valuable in all cases, we will have to dispense with on account of the liability of its causing increase of pigmentation. Psoriatic patients usually have the appearance of being in perfect health; in fact, many are far above the average. Proper diet, however, is important; our patient says he lives mostly on lean meat, coffee, very little starchy, and no oily food, if he can avoid it. He suffers more from cold than the ordinary person, and I think he needs what he omits from his food—fat and starch; we will give him vegetables to furnish the starch, and, if he will not take fat as food, oil as medicine. The gleet must be cured. Whatever drug or treatment we decide upon in a given case should not be discontinued until it has been given for a considerable length of time, even if at first the disease seems aggravated. With patience on the part of the patient, with careful scrutiny and removal of trivial symptoms, and proper medication, the lesions of psoriasis can be made to disappear within from one to three months.

Let us now consider the pigmentation. Is there any means by which we can hope to relieve him of this disfigurement? The color of the skin in the white race is due to the deposit of pigment-granules in the lower layers of the rete cells; the amount varies as the individual is light-colored or dark-colored, and when abnormal pigmentation occurs, all the cells of the epidermis may be stained; the pigment itself is normal, only increased in amount. In argyria the silver is deposited in minute particles in the derma, and the same is true of the substances used in tattooing. It is interesting to notice the tolerance of the skin to the presence of a foreign body, these substances remaining throughout the whole life of the individual without causing the slightest inconvenience. The source of the normal pigment is the blood, the lower layer of epidermic cells selecting and depositing the granules, but I think that these same cells are manufacturers as well as selectors and that from their own protoplasm they may, under certain influences, produce the pigment. The arsenic-staining is due to the stimulation of rete cells by the drug, and not to a deposit of the metal in the derma. The specific treatment of hyper-pigmentation is eminently unsatisfactory, and before beginning any treatment we must be positive that the process is at a standstill. Those dyschromæ which are symptomatic of disease of the liver and uterus may disappear when these organs are restored to their normal condition, and to this end our therapy is directed. The specific treatment consists of the use of local applications that will hasten the reproduction of epidermis, the new and unpigmented taking the place of the old pigmented epidermis. Epidermis is easy enough of removal by such drugs as croton oil, mustard, and cantharides, but these are unavailable because their use is followed by an increased deposit of pigment. Nitric acid, hydrochloric acid, acetic acid, corrosive sublimate, and hydrogen dioxid will remove the epidermis and not be followed by increase of pigment. If time is no object borax, sulfur, or the alkaline soaps may be used, the slow process, I think, giving the best result. By the rapid process we aim to form a blister over the stain quickly, and then subdue the irritation as quickly as possible. In the case of the man before us there are reasons why this treatment would not be best: first, because of the large surface involved; second, it is upon parts of the body that are covered; and third, the process is not at a standstill, as we find that new areas of pigment are appearing while old ones are disappearing, and any effort that we might make is likely to be followed by an increase rather than by a decrease of pigment.

Let us now consider the affection of the palms and soles. Here we find the whole surface thickly studded with these dome-shaped epidermic lesions; for the most part each lesion preserves its identity, although so numerous are they that their borders touch all around, and so fast are they developed that he is obliged to pare them off at least twice a week; the condition interferes with his work, and is a matter of grave import to him. Ordinary callosities, or those due to occupation, offer some chance of being bettered by treatment or by giving up the occupation; but in this case neither rest nor any local application that has been used has been of any benefit. Internally in these cases we rely upon arsenic; but here we are again handicapped, for we believe the condition was caused by the use of this drug, and we have stopped its use. Locally we will have the parts pared down close, and then apply a plaster of salicylic acid (15 per cent.) for three days, when, on its removal, we will be able to peel off the epidermis; an alkaline ointment should then be bound to the surface for twenty-four hours, and on its removal a simple fat applied. The process will have to be repeated as often as the growths re-form. I shall hardly expect to get a permanent cure, relief being the best we can hope for. The case is an interesting one, and has shown us that serious untoward effects sometimes follow the giving of arsenic. The lesson it teaches is that it is better to treat first with other drugs those affections of the skin in which arsenic seems indicated, reserving for the arsenic those that resist all other medication.

CLINICAL MEMORANDA.

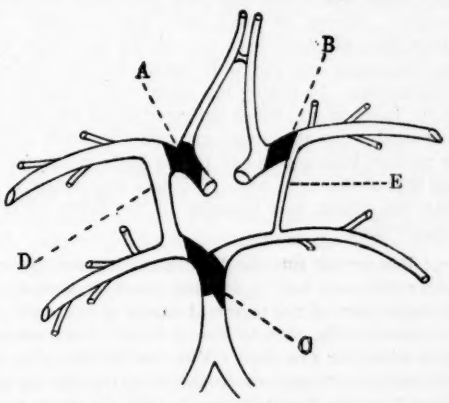
MULTIPLE THROMBOSIS OF THE CIRCLE OF WILLIS.

BY JOSEPH LEIDY, M.D.,
OF PHILADELPHIA;
PHYSICIAN TO THE OUT-PATIENT DEPARTMENT OF THE PENNSYLVANIA HOSPITAL; ASSISTANT PHYSICIAN TO THE HOSPITAL FOR EPILEPTICS.

CASES of multiple thrombosis of the cerebral arteries, producing a group of symptoms similar to those presented by the case reported by Dr. J. T. Eskridge in THE MEDICAL NEWS of January 6, 1894, are so unusual that I may be pardoned for occupying a brief space to refer to a similar case, including a report of the autopsy, presenting almost an exact duplicate of the clinical picture of the case of Dr. Eskridge.

At the meeting of the American Neurological Society, held in June, 1890, I had the honor to present an interesting pathologic specimen of "Multiple thrombosis of the circle of Willis, in connection with a series of anomalies and asymmetries found in thirty-five specimens of the circle of Willis," believing the explanation of frequent evanescent palsies, embolic or thrombotic, to reside in either an anomalous or asymmetric condition of these arteries, which is far more frequent than is generally supposed. The pathologic specimen presented proved this to be the fact in explanation of an attack in a case which I reported to the Pathological Society of Philadelphia in November of the same year.

The patient, a colored man, thirty years of age, married, addicted to the use of alcohol and tobacco to excess, with a syphilitic history, was admitted to the medical wards of the Pennsylvania Hospital May 10, 1890. He had been bled at the nape of the neck at intervals of six months for three years previously for the relief of occipital headaches, and it was his intention to have been cupped on the day previous to his admission to the hospital. While driving his cart he noticed a loss of power in the right leg and arm, his tongue felt thick, articulation was difficult, and he would have fallen had he not been caught by his companion who was driving with him. Twelve hours after he was brought to the hospital he had incontinence of urine added to the foregoing group of symptoms; he was dazed, but conscious; his tongue was protruded toward the paralyzed side. His condition improved during the following five days, with some return of power in the right arm, and considerable improvement of speech. On the sixth day there was some loss of power noted in the left leg, and in the course of twenty-four hours the whole of the left side of the body was involved. He became unconscious on the following day, with also secondary loss of power in the right arm and with involvement of the sphincters. Death supervened in forty-eight hours. The clinical picture presented by this case strikingly portrays the group of symptoms and the course in Dr. Eskridge's case. The pathologic specimen is now preserved in the Mütter Museum of the College of Physicians for reference.



A. Thrombus in left middle cerebral artery.
B. Thrombus in right middle cerebral artery.
C. Thrombus in basilar artery.
D. Large left posterior communicating artery.
E. Unusually small right posterior communicating artery.

I believe the amelioration of the symptoms following the first seizure to have been due, first, to a cessation of the pathologic process through heroic antisyphilitic treatment; and secondly, to the anomalous and asymmetric condition of the circle of Willis, which afforded a partial collateral circulation to supply the left hemisphere through the outer distribution of the middle cerebral artery by way of an enormously large left posterior communicating artery. I append a rough sketch of the specimen.

The diagnosis of thrombosis of the cerebral arteries was made ante-mortem, and confirmed subsequently by the characteristic lesions found at the autopsy.

This description, in conjunction with the case of Dr. Eskridge, makes the picture both clinically and pathologically one of extreme interest.

233 SOUTH THIRTEENTH STREET.

THREE CASES OF PARTIAL PARALYSIS OF THE OCULAR MUSCLES FROM INJURY TO THE HEAD.

BY VITO L. RAIA, M.D.,
OF PROVIDENCE, R. I.

1. PARALYSIS OF THE EXTERNAL RECTUS OF THE RIGHT EYE.—A man, aged sixty-three years, was struck on the left parietal region by a board, sustaining a contused wound of the scalp. He remained unconscious for several hours and afterward complained of headache and dizziness. Three weeks after the accident the patient began to see double. When examined, vision was normal, abduction of the right eye abolished, movements in all other directions normal. The double images (homonymous diplopia) were fused into one at 20 feet with a prism 26°, base outward.

2. PARALYSIS OF THE SUPERIOR OBLIQUE OF THE LEFT EYE.—A man, aged forty-five years, fell and sustained a contused wound of the upper part of the right temple. Three days after the accident the patient began to notice a disturbance of vision. At the site of the injury there was a scar one inch long, in a horizontal direction. Vision of both eyes was normal. The patient kept his head bent toward the right side, with chin depressed and lids wide open; diplopia was very embarrassing. In testing the latter with a candle, the left (or false) image, which belonged to the left eye, was downward, with the upper extremity inclined toward the median line, and closer to the body of the patient than that of the right one. Diplopia was present only when the object was brought in the lower common field of vision.

3. PARALYSIS OF THE INTERNAL RECTUS OF THE RIGHT EYE.—A boy, aged nine years, was struck on the upper part of the temporal region of the right side by a can of milk, thrown from a train. He remained unconscious for two days. Four weeks after the accident the patient began to complain as regards his eyes. When I saw the boy there was a scar about two inches long and three-quarters of an inch wide transversely, situated at the upper and posterior part of the temporal region. The surface of the scar was very irregular and considerably lower than that of the skull, due evidently to fracture of the latter, with depression of the fragments. Vision was normal, mental faculties perfect, movements of convergence of the right eye weakened. The patient had diplopia (crossed).

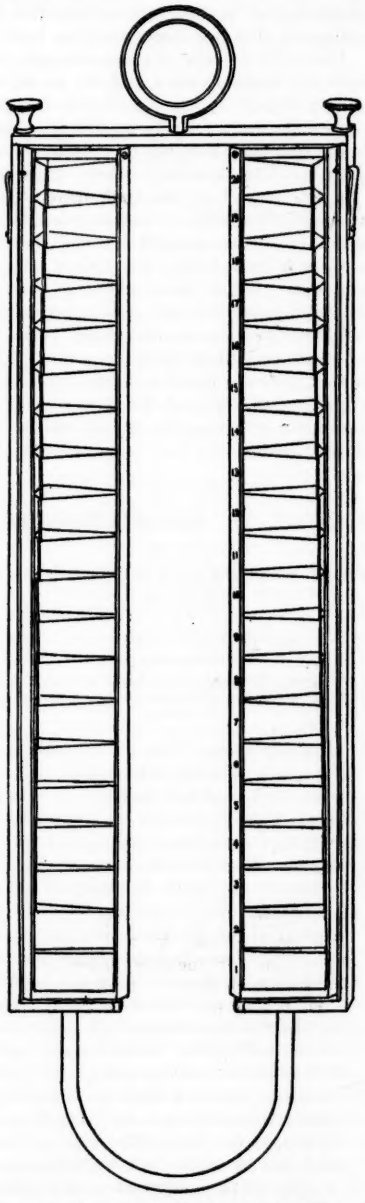
These cases came under my observation at the same time and show the following peculiarities: 1. In the first two cases the injury was on one side of the head, while the ocular paralysis affected the opposite eye. 2. In the last case, while the compression seemed to be exerted upon the brain, the permanent injury was limited to a branch of the oculo-motor nerve. 3. The paralysis of the ocular muscles came on some days after the accident (three weeks in the first, four weeks in the last, and two days in the second case).

NEW DEVICE.

AN ARRANGEMENT OF PRISMS FOR TESTING ADDUCTION, ABDUCTION, EXOPHORIA, AND ESOPHORIA.

BY GEORGE M. GOULD, A.M., M.D.,
OF PHILADELPHIA.

IN testing for exophoria and esophoria, and in measuring the power of adduction or of abduction, I have found



the common methods in use both time-wasting and vexatious, and have suggested to Messrs. Wall & Ochs, opti-

cians, 1702 Chestnut Street, Philadelphia, that a double series, "battery," or "pile" of prisms would be of service. The illustration given herewith is the result of our mutual efforts, and after thoroughly testing the instrument I commend it as, mechanically, beautifully made, and, scientifically, admirably effective and convenient. The prisms begin with 1° lenses upon each side, and increase by integers to 20°, so that with 2° steps one may measure all degrees of adduction or of abduction from 2° to 40°. The open central space permits the lenses to be brought close to the eyes without any interference with the patient's nose. The larger handle below allows the first tests to be made with the lowest-power prisms, likewise without striking the nose; and the lowest-power prisms are placed below in order that in testing from low powers to higher powers, the patient's breath may not cloud the lenses to be used next in order. To measure adduction each "battery" is placed "bases out;" to measure abduction, each is revolved so that the bases are "in." To test exophoria and esophoria, the same methods are pursued, the Maddox-rod (*red*) being first placed before one eye in the trial-frame. Each battery is revolved at pleasure, being fixed by a pivot-mechanism below and above, and temporarily held in the position desired by clutches at the sides opposite the 20° prisms. By this mechanism the four tests desired may be made with great celerity and ease. The instrument may also be used for short periods of exercise in adduction or abduction. The illustration is one-half the actual size.

MEDICAL PROGRESS.

Compression of the Spinal Cord by Echinococci.—FRIEDEBERG (*Centralbl. f. klin. Medicin*, 1893, No. 51, p. 1057) has reported the case of a man, thirty-one years old, who for a period of more than three years had suffered with pain in the right thigh, of varying intensity, and shooting in the course of the sciatic nerve. For a short time there had been some incontinence of urine, particularly as a result of violent coughing. There was some sensitiveness on pressure in the hypogastrium and in the course of the right sciatic nerve. The knee-jerks were normal and there was no derangement of common sensibility. An attack of looseness of the bowels was attended with the evacuation of a number of segments of tenia solium, and a course of filix mas was prescribed. Some time later pain in the region of the anus was complained of, and on inspection the skin in this region was found reddened and the tissues infiltrated, while a small blind fistula passed for a short distance by the side of the rectum. In due time the periproctitic abscess healed. The pain in the right thigh persisted, and to it became added numbness of the foot, while the gait became staggering and the temperature was slightly elevated. As time went on, the knee-jerks became exaggerated and ankle-clonus appeared. Pain was also complained of on pressure in the lower dorsal and upper lumbar regions. Finally the loss of power in the lower extremities became complete, marked impairment of sensibility developed, and control of the bowel was lost. Electric irritability was lost, bedsores and other evidences of trophic disturbance appeared, and several fluctuating tumors became evident in the abdomen. Death took place amid the signs of respiratory failure. Upon post-mortem examination the sacrum was found to be destroyed and replaced by a gelatinous collection, in the midst of which numerous small vesicles could be seen. Gelatinous masses and vesicles extended in the length of the vertebral canal to the level of the second dorsal vertebra, compressing the cord, without having penetrated the dura mater. In the region of the last lumbar vertebra the cord was compressed to a delicate band. Small cavities were found in either lung and a mother-cyst with numerous daughter-cysts in the right iliac fossa. In the daughter-cysts scolices and hooklets were found. The right ureter and kidney presented the changes that follow obstruction to the flow of urine.

Pulsation of the Larynx due to Arterial Anomalies.—At a recent meeting of the Berlin Society for Internal Medicine, LITTEN (*Deutsche medicinische Wochenschrift*, 1893, No. 47, p. 1224) reported the case of a nervous woman, fifty years old, who complained of precordial distress, palpitation of the heart, manifestations of tachycardia, and an uncomfortable sensation in the throat, together with marked beating of the vessels of the neck and pulsation of the larynx. With the cardiac systole the larynx was elevated and displaced to the left. The pulsation could also be observed in the whole course of the trachea. Physical examination failed to disclose the signs of hypertrophy of the heart, valvular disease, or aneurism of the arch of the aorta. The vessels that arose from the arch, however, pulsated strongly and were evidently greatly dilated. It was concluded that there must be an aneurism of one of the vessels arising from the carotid artery to supply the thyroid gland, either the laryngeal or the thyroid, although the evidence was not demonstrative. At a later period it was thought that a diastolic murmur could be heard over the sternum. The woman finally died, and upon post-mortem examination it was found that four large vessels took their origin from the arch of the aorta, the one arising between the left carotid and the left subclavian representing a thyroidea ima. This anomalous vessel was as large as a normal radial, and ascended along the middle line of the trachea to the level of the second ring, where it divided into three branches, which broke up into many smaller ramifications upon the surface of the thyroid gland. All of the vessels that arose from the arch of the aorta were greatly dilated, while the innominate was additionally conspicuously elongated. The intima of these vessels presented areas of fatty degeneration, but no evidences of pronounced atheroma, such as ulceration or calcification.

Paretic Dementia at Puberty.—BRISTOWE (*British Medical Journal*, No. 1716, p. 1099) has reported the case of a boy, thirteen years old, who two or three years before had been knocked down by a horse and trap, which went over him, the shaft striking him on the back of the head. The child was stunned and remained unconscious for about three hours. Before the accident he was bright and intelligent, but afterward was never the same. Intellectual ability gradually declined. Fourteen months before coming under observation the boy had some kind of seizure in which he lost power upon the left side of the body. The weakness remained and the

child gradually grew worse, and finally became unmanageable. He shouted and screamed without cause, tried to run away, and became dirty in his habits and violent in his conduct. The pupils were equal and sluggish, though later the left was larger than the right. The knee-jerks were at first greatly exaggerated, but later were lost; ankle-clonus could not be elicited. The gait was spastic; the tongue was tremulous, but protruded straight. Speech was hesitating. The hands were held before the face all day and were rubbed, while unintelligible sounds were uttered. While under observation the boy had a convulsive seizure, apparently attended with loss of consciousness. Twitching of the right eye and hand were first noticed, and later the muscles of the right side of the face were involved. After the attack the right leg was found to be weak. Emaciation progressively increased, so that it became necessary to keep the child in bed. He had two other seizures, one involving the left side, the other the right. As time went on the boy passed a purely vegetative existence, exercising no control over the sphincters. Though he took food voraciously the emaciation persisted. There was at no time vomiting or optic neuritis.

Differentiation of B. Coli Commune from B. Typhosus.—FREMLIN (*Archiv f. Hygiene*, vol. xix, fasc. 3), as part of the result of an extended study of B. coli commune from various animals, gives the following summary of the differences between that species and B. typhosus:

1. The motion of B. typhosus is more active and more extensive. 2. B. typhosus shows a much greater tendency to form threads, as two or more individuals are often seen joined, and six or ten in line are not unusual; with the other species such a thread-like form is almost unknown. 3. The growth of B. typhosus on gelatin is distinctly slower; colonies three days old are not further advanced than two-days-old colonies of B. coli commune. This difference is also observed on agar-plates and in stab-cultures. 4. Colonies of B. typhosus are almost invisible on potato, while B. coli commune forms distinct broad orange streaks. 5. B. typhosus has no fermenting action, while the other bacillus possesses well-marked powers in this respect. 6. B. typhosus does not curdle milk, while B. coli commune does. 7. B. typhosus has many flagella. Preparations showing these clearly may be obtained without difficulty from cultures a week old. In this we note a marked difference from B. coli commune, as with it preparations showing flagella are very difficult of demonstration, even under favorable conditions. 8. B. typhosus does not give the indin (indol) reaction with potassium nitrite, while B. coli commune does.

The Etiology of Melæna Neonatorum.—GARTNER (*Archiv f. Gynäkologie*, B. xlv, H. 2, p. 272) has reported two cases of melæna neonatorum, in which examination of the intestinal contents and evacuations, as well as the blood from the heart and the spleen, and the tissues of the spleen, liver, and intestine, disclosed the presence of a short bacillus, with active movement and discernible flagella, multiplying the fission and giving rise to the production of gas. The organism was cultivable upon the ordinary media, and stained readily with anilin colors. Inoculation of young animals, especially dogs, gave rise to the production of a condition comparable to melæna as seen in newborn children, and in the blood and organs of these animals were found organisms the same as those inoculated. The opinion is expressed that the organism found is the causative agent of the morbid condition with which it is associated, and further, that the umbilicus constitutes the portal of entry, as in most, if not all, recent cases, the evidences of peritonitis are to be found.

THERAPEUTIC NOTES.

For Migraine.—

℞.—Butyl-chloral hydrate . . . gr. xv.
Tincture of gelsemium . . gtt. xxx.
Tincture of cannabis indica . gtt. xv.
Glycerin . . . . . ʒiv.
Distilled water . . . ad fʒijss.—M.
S.—A dessertspoonful p. r. n.

℞.—Butyl-chloral hydrate . . . gr. xvi.
Extract of cannabis indica . . gr. iv.
Make into 16 capsules. Take 2 at once, and 1 every hour or two hours until relief ensues.
Nouv. Rem.; Journ. de Méd. de Paris, No. 49.

For Epilepsy.—

℞.—Potassii bromidi . . . . ʒiv.
Tincturæ belladonnæ . . . fʒiij.
Infusi gentianæ compositus . ad fʒviij.—M.
S.—A tablespoonful thrice daily.

℞.—Camphoræ monobromat. . . gr. xlviij.
Ext. gentianæ . . . . q. s.
Ft. massæ et div. in. pil. no. xij.
S.—One at bedtime.
BLACK, *British Medical Journal*, No. 1723, p. 13.

For Prostatitis.

℞.—Ichthyol . . . . . gr. vijss.
Ext. belladonnæ . . . gr. ijss.
Olei theobromæ . . . ʒiv.—M.
Ft. suppositoriæ no. x. S.—Introduce one into the bowel once or twice daily.
ULLMANN, *Wien. med. Zeitg.*, No. 29; *Les Nouv. Rem.*, No. 23.

For Pruritus Vulvæ.—

℞.—Hydrarg. chlorid. corrosiv. . . gr. j.
Aluminis . . . . . gr. xx.
Pulv. amyli . . . . . ʒjss.
Aquæ menth. piper. . . ad fʒvj.—M.
Ft. lotio.
S.—Apply topically. *Practitioner*, No. 306.

For Tinea Tricophytina.—

℞.—Sodii hyposulphitis . . . ʒj.
Spts. rectificat. . . . . ʒiv.
Aquæ . . . . . ad fʒviij.—M.
Ft. lotio.
S.—To be applied to the affected parts after they have been thoroughly washed with a brush and soap and water. *Practitioner*, No. 306.

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SATURDAY, FEBRUARY 3, 1894.

TO PREVENT THE SPREAD OF TUBERCULOSIS.

IT will surely not be gainsaid that much practical benefit has already accrued through the young science of bacteriology. Though all may not admit the value of protective inoculations, there can be none that will deny the great advances that have been made in sanitary science in the last decade as a direct outcome of the results of bacteriologic research. Not only have we thus been furnished with a rational explanation for the employment of hitherto empiric methods of sanitation and hygiene, but there have likewise resulted an increased saving of life and the avoidance of immeasurable disease. As in all questions, so in this, there have been extremes of view. On the one hand there are those for whom it is not too much to claim almost unlimited possibilities for bacteriology; while on the other hand there are not wanting others who with equal ardor deny the new science everything. Between these two extremes is the judicial mean, including those upon whom falls the important but not agreeable task of harmonizing conflicting opinions and of neutralizing the antagonizing influences of unrestrained zeal and torpid conservatism.

We have now learned enough of schizomycetes to know that they are almost omnipresent; but we have further learned that their mere presence does not of itself constitute disease. In the development of the so-called specific disease-processes something is needed in addition to the presence of the micro-organism that acts as the exciting cause—and this is the predisposition, *i. e.*, to use a favorite simile, the soil must be suitable for the implantation and fertilization of the seed; else this will not thrive. Now if this knowledge has any significance and is to be put into practical application, it means that for prophylactic purposes the greatest stress must be laid upon and the greatest attention paid to both individual and civic hygiene; that is, the resisting power of the individual must be increased, his susceptibility to disease diminished, and the causative agency attenuated or eradicated. Granting, then, the potency of these several factors in the causation of disease, it must be perfectly obvious that the liability to disease will be diminished if the influence of any or all is removed.

At the present time quite an active agitation is going on in various parts of the United States as to the wisdom of including tuberculosis, and particularly pulmonary tuberculosis, among the diseases professional cognizance of which should be reported to some central health-authority, with the object of employing such hygienic and sanitary measures as the circumstances seem to indicate or warrant for restraining the spread of a disease for the prevention of which it is known that so much can be done. Legislation to this effect has already been enacted in the State of Michigan, where it is obligatory upon physicians to report to the Board of Health cases of tuberculosis under their professional care, and in the city of New York the Board of Health also requires notification of cases of tuberculosis. Such a course of action has, besides, the indorsement of the French Congress of Tuberculosis, the American Public Health Association, and the Section of Hygiene of the Pan-American Medical Congress. Missionary work is being done in this direction by the French League for the Prevention of Tuberculosis, and by the Philadelphia Society for the Prevention of Tuberculosis.

As is the case with every scientific advance, so the proposition of registration in tuberculosis has encountered not a little opposition. Among other objections it is suggested that the unfortunate victims of the disease would thus be branded with an irremovable stigma, that they would be shunned by their fellows, that the doors of society would be closed to them, that their personal liberty would be

interfered with, and that other more or less irksome restrictive measures would be adopted. Of this radical extreme there need be little fear, the difficulty itself arousing an adequate and sufficient sense of such danger. Over-zeal seems less probable than under-zeal. Most likely in actual outworking only such measures would be enforced as would tend to result in improving the condition of the sick and saving the well from infection, without undue trespass on liberty and without any real hardship to the sick or to his friends. In exactly what these measures would consist, if registration became general, would be a subject for future mature deliberation. Nor is it unlikely that the medical profession would be ignored in the framing of the rules governing the entire course of procedure.

The situation appears to be simply this: It is generally admitted that the tuberculous patient constitutes the focus whence transmission of the disease occurs. This most commonly takes place through the intermediation of the expectorated matters, which being indiscriminately disposed of, become dry, are ground to powder, and in the form of dust are carried by currents of air to find lodgment, especially in the respiratory passages of the well, some of whom are predisposed by heredity or by unfavorable hygienic surroundings to the infection; or they fall upon exposed articles of food or drink, and in this manner gain access to the gastro-intestinal tract. It is the almost universal consensus of opinion that if the sputum were in the first place properly disposed of, the danger would at once be greatly diminished. In the failure of this it becomes necessary as far as possible to sterilize the contaminated surroundings of the patient, including the bed-clothing and the body-clothing, the furniture, the walls and floors of the living-rooms and the like. Under existing circumstances the conscientious physician will in the individual case advise that such steps be taken, but he has no means of insuring their carrying out, and, besides, there remain a considerable number of cases that do not come under the physician's immediate care, and that require attention directly from the health-authorities. It thus comes about that what is everybody's business is nobody's business—and that is the present status of affairs.

It is obviously the poor, the ignorant, and the indifferent that suffer most and likewise constitute the greatest menace to others in this connection. Will anyone undertake to say that among these, suitable precautions are taken in any considerable proportion of cases? Now if there were a central health-authority (such as a Board of Health) to which notification should be made of houses in which tuberculous persons reside, such a body could in a given case direct or conduct a proper sanitary investigation and could determine upon the line of action to be taken. It could, for instance, recommend to the house-owner or the house-occupants, as the circumstances seemed to demand, the carrying out of certain measures; and in case these were not adopted the body could then have authority to undertake the necessary procedures on its own account. If, as is the case, improperly constructed buildings may be condemned, house-drainage must be subjected to official scrutiny, and nuisances of one kind or another may be suppressed, surely it does not seem unreasonable that the State or the municipality should have the power to declare as a menace to health and life certain houses or quarters that are recognized to be centers of disease-infection. Nor should such authority be withheld by reason of fear that a perfect system of sanitation does not appear immediately feasible, or because everything that it is thought should be done does not seem at once capable of performance. As experience accumulates, old methods would be improved and new methods devised. It does not seem likely that a body thus empowered would attempt the impossible.

In addition to the functions of caring for the hygienic and sanitary surroundings of tuberculous patients unable or unwilling from poverty, ignorance, or indifference to exercise such care, such a body could also see that both well and sick were instructed by means of tracts, and perhaps also by means of popular lectures, as to the nature of tuberculosis, its dangers, its mode of transmission, and the best means of preventing its spread and staying its advance.

To sum up briefly, our own position is practically this:

Tuberculosis is a disease that is transmissible from the sick to the well. Its perpetuation and its transmission depend upon a condition of lowered vitality (sometimes hereditary, but more commonly the result of unfavorable hygienic conditions and habits), in conjunction with a failure to sterilize the sputum by some approved means and the contamination of the surroundings of the tuberculous. These

conditions are to be best remedied through the intelligent action of a properly authorized and organized central body, together with the hearty coöperation of the medical profession, both individually and collectively. With this end in view, registration of houses in which tuberculous persons reside (in case of death notification is now almost universally made through the usual channels) would tend to insure a proper carrying out of suitable sanitary measures, and the instruction of such persons and their friends as to the best means of preventing the further spread of the disease, and also as to the best mode of life for the sick.

EDITORIAL COMMENTS.

Associations for the Relief of Widows and Children of Deceased Medical Men.—We have on a previous occasion spoken of the wisdom and philanthropy of organizations for the relief of indigent widows and children of deceased medical men, commending their formation everywhere, and urging all physicians to enroll themselves as contributing members. The excellent work done by existing associations must constitute the strongest argument for their maintenance and the extension of their usefulness. From a recent report of the Board of Managers of the N. Y. Society for the Relief of Widows and Orphans of Medical Men, we learn that during the year 1893 eleven widows and three children of deceased members were relieved; $6610.30 were added to the permanent fund, which has reached the respectable proportions of $189,157.06. The membership of the Society numbers 143, and the expenses for the year were but $180.30. The number of benefactors is 55, most of whom have contributed $150 each. The largest gift is one of $20,000, by the late Dr. Alonzo Clark. In addition to this Society there exists in New York also a Physicians' Mutual Aid Association, which provides for the payment of $1000 to the representatives of a deceased member, whose fees during life would have been from $15 to $20. Our own Mutual Aid Association of the Philadelphia County Medical Society is likewise doing excellent work, its usefulness, however, being restricted by the smallness of its permanent fund. As the Association is not so much intended for mutual aid as for the relief of indigent widows and children of deceased medical men, a change in name to Benevolent Fund of the Philadelphia County Medical Society is properly contemplated. As one of the speakers said, at the recent annual meeting of the Association, it would be desirable to have the benefactions of the Society also extended to the families of other medical men than those that have been members. Such a noble end is only to be attained by the creation of a large permanent fund. It thus becomes the duty of every medical man to enroll himself as a member of his local Aid Association, to contribute as largely to its funds as his means will allow, and to exert his influence among his clients and friends to induce them to contribute during life, and bequeath at death, generously, to so worthy and humanitarian a cause.

To Abolish the Office of Coroner.—An active movement is on foot in the city of New York to correct the abuses and inadequacies of the office of Coroner by abolishing the office or so modifying existing legislation as to eradicate the evils of the present system. A memorial has been prepared by a duly authorized committee of the Medico-Legal Society of the State of New York and presented to the Legislature asking for the desired reform. The recommendations proposed are:

The creation of a new officer to be styled "Medical Examiner" (as in Massachusetts and Connecticut), or "County Physician" (as in New Jersey), who shall be authorized to conduct inquests or examinations in all cases in which death has occurred by violence, or in which there is reason to suspect that death is due to other than natural causes. The duties of this officer should consist in the conduct of all autopsies and the decision of all questions on the medical side of the inquiry (without a jury) before a competent court or before the Coroner as a judicial officer, if retained after the plan adopted in Connecticut.

This medical examiner should be appointed by the county judges of each county, except in New York, where the appointment is to be made by the Chief Justice of the Court of Common Pleas. Only physicians skilled in their profession, of at least five years' practice, are to be eligible to such appointment, and, so far as possible, without reference to partisan or political considerations.

Only persons learned in the law shall be eligible to the office of Coroner, and if the inquiry is conducted before the Coroner he shall have charge, judicially, of all legal questions, and the hearing, inquest, and proceedings shall be the same as if before the police magistrates in the city of New York or other cities of over 100,000 inhabitants, and before justices of the peace in all counties of the State, except in New York and Kings counties.

The movement has our warmest indorsement and our heartiest wishes for its entire success. We could then look forward to the possibility of a similar much-needed reform in the State of Pennsylvania.

Liability of Railroad Corporations for Negligence of Physicians.—Whether or not it is within the corporate powers of a railroad company, under any circumstances, to oblige itself to the rendition of medical or surgical aid to its sick or injured employés, by assuming it as a duty or otherwise, or to become liable for any negligence of any such surgeon acting in the line of his profession, the Supreme Court of Florida says is a *quære*. If it can become so liable, it holds that its whole duty in that respect will have been performed when it employs a person of ordinary competence and skill in that profession; and that, having done so, it cannot be held liable for the carelessness or negligence of such surgeon in the performance of his duties as such. This was brought out in a recent case in which an injured employé undertook to fasten liability upon a railroad company on a charge that a surgeon who was employed by said company to render medical and surgical aid to injured employés did, in the exercise of his duty as such physician and surgeon, set his injured arm in such an unskilled and negligent manner as to render it ill-shaped, and forever useless to him in the

performance of any manual labor. There was no allegation or proof that the physician and surgeon so alleged to have been employed by the railroad company was not competent and skilled in the line of his profession; and, in the absence of such allegation and the proof to sustain it, the court said that the railroad company was not liable for any negligent exercise by such surgeon of his profession in the treatment of the employé complaining. Even though it should be admitted to be within the corporate powers of such a company to obligate itself to the rendition of medical and surgical aid to its sick or injured employés, by assuming it as a duty or otherwise, or to become liable under any circumstances for any negligence of any such surgeon acting in the line of his profession, still it would seem to be well settled that it will have performed its entire duty in that respect when it employs a person of ordinary competence and skill in that profession; and that, having done so, it cannot be held liable for the carelessness or negligence of such surgeon in the performance of his duty as such.

Mrs. Ernest Hart, the wife of the editor of the *British Medical Journal*, has during the past year become personally known to thousands of Americans, and the knowledge of her work to millions. In carrying to the Irish poor the means and methods of self-help this most remarkable woman has done a work that is good beyond estimation and compare, and has done it with a self-sacrifice that even those who know her most intimately can but barely guess. What the history of her life would be was well suggested by her refusal, as a girl, to wear fine or expensive dresses to church, and as a young lady, by her return of a gift of diamonds with the request for Ruskin's works instead. Such girls as that and such women as she, are indeed sadly rare. While teaching the starving Irish to dye and weave, and at the same time carrying on any amount of other work among the poor of London, this many-minded woman has also kept her place in the best society of London, has been an art-lover and worker and a student of the social life and handicrafts of nearly every country of the world. But our explanation of this allusion in a medical journal consists in the fact, known to but few, that Mrs. Hart before doing these things had passed with the highest honors the most rigorous examinations of the medical faculties of Paris, and by thorough hospital service had completed a perfect knowledge of medicine both theoretic and practical. Wherever she goes physicians should vie with others in hastening to do her will, and to do her honor!

When Rogues Fall Out, etc.—According to the *Summit County Beacon*, of Akron, Ohio, we learn that the Cuyahoga Falls (Ohio) Keeley Institute has sued the Marysville (Ohio) Keeley Institute for $100,000. The plaintiff states that he has paid to the defendant $30,000 in cash and $49,000 in stock, besides agreeing to pay a bonus of $20 for each patient under treatment, upon the representation that the defendant had paid the original Keeley Company $100,000 for the privilege of the exclusive use of the treatment in the State. It had further been claimed that with 600 patients a year a dividend of 34.16 per cent. could be declared, and with 1000 patients a dividend of 74.16 per cent., and also that the number of "lapses" would not exceed 5 per cent., whereas they exceeded 25 per cent., and among the first hundred 40 per cent. Finally, it had been claimed that the morphin-cure was absolute, whereas it proved entirely worthless. Surely the bottom of Keeleyism has fallen out. A deluded public will now be ready to turn to legitimate medicine until a new miracle-worker appears. As the mine had been pretty well worked out the suits for libel against the London *Lancet* and the London *Medical Press and Circular* were naturally withdrawn.

School Outhouses.—Although it has been enacted that boards of school-directors and controllers in the State of Pennsylvania shall provide suitable and convenient water-closets for each of the schools under their official jurisdiction, not less than two for each school or school-building where both sexes are in attendance, in their respective school-districts, with separate means of access for each; and, unless placed at a remote distance one from the other, the approaches or walks thereto shall be separated by a substantial close fence not less than seven feet in height; and it shall be the duty of the directors or controllers to make provision for keeping the water-closets in a clean, comfortable, and healthful condition; there is reason to believe that this wise legislation is not everywhere throughout the State adequately administered. The merits of the law are so perfectly obvious that we should think the mere suggestion of delinquency should stimulate those in authority to its effective administration.

An Appeal to the People, through the advertising columns of daily (lay) newspapers, is being made to further the sale of the "Animal Extracts, prepared according to the process and under the supervision of Dr. Wm. A. Hammond." An extensive advertisement appeared in the advertising columns of the Chattanooga *Daily Times*, of January 19, 1894. Comment is unnecessary!

SELECTIONS.

TAXING PROPRIETARY MEDICINES.

THE Ways and Means Committee of the House of Representatives has recommended the restoration of the tax on proprietary medicines. If to the tax the printing of the ingredients on the label would be required, much could be accomplished in the interest of the people and the profession. In this way this subject is regulated in European countries. Some of the preparations have value and can be used by the public with safety, while many of them are not alone dangerous, but worthless, and their sale is dependent entirely upon the fradulent claims to cure everything, in their advertisements. In fact, if this advertising was stopped, they would find no sale, and just in proportion as it is pushed, are they sold. They appeal to the hopes and fears of the sick and afflicted, and it is the obtaining of money under the worst kind of false pretences, and is really nothing more or less than robbery. While Congress is engaged in this business, would it not be well to tax the itinerant practitioner and vender of nostrums, with show-

accompaniments? They go from one State to the other, and the question naturally arises whether this is not one of inter-state commerce, that should be regulated by Congress. It is the policy of this class of frauds not to stay too long at one place, or to return at too short intervals to the same place, for the reason that it takes time to secure a fresh crop of dupes.—*Journal of the American Medical Association.*

ENGLISH AND AMERICAN JOURNALISM COMPARED.

FROM this condemnation I desire to exclude the literature of our American brethren. The country which has given to us the *Index Medicus* and the *Index-Catalogue* of its splendid library is not likely to fail in knowledge of the history of medicine. A knowledge of the work of others that is nearly always honest and thorough is as common in the best American medical literature as it is rare in our English journals. The man who writes on his own experience and knowledge writes on a poor and narrow and shifty foundation. In science he is to be found only in medicine; and in scientific medicine he bears the prefix—in all its significations—British.—*From Presidential Address of* J. GREIG SMITH, *on Modern Medical Journalism; Bristol Medico-Chirurgical Journal.*

REVIEWS.

CHEMISTRY AND PHYSICS: A MANUAL FOR STUDENTS AND PRACTITIONERS. By JOSEPH STRUTHERS, Ph.B., D. W. WARD, Ph.B., and CHARLES S. WILLMARTH, M.S. (The Students' Quiz Series, edited by B. B. GALLAUDET, M.D.) Philadelphia: Lea Brothers & Co., 1893.

THIS is a neatly printed, small octavo of two hundred and seventy-nine pages, with an index and numerous good illustrations. It is arranged in questions and answers, a method that has been often adopted in works of this class, but concerning the advantage of which there is room for argument. The work, of course, is primarily intended to meet the wants of students taking chemistry as part of a general collegiate, medical, or dental course. It is a compilation from standard text-books, and the merit of such a work lies essentially in the judgment and accuracy with which the selections are made. The combination of physics with chemistry renders the volume rather more widely useful than a compend of chemistry alone, and as many medical schools are now requiring an entrance examination in physics, the medical student will find the book useful in the pre-college year. The text is generally correct. We note with regret the use of the old spelling, and the occasional occurrence of such objectionable names as "bisulphate of potash," "bicarbonate of sodium."

The organic chemistry occupies sixty-seven pages, presenting a good summary of this extended field. The recent investigations on the structural formulæ of the sugars might have been presented more clearly, and the necessity of great condensation has rendered the text in rare instances rather vague. There is no section on clinical chemistry.

TREATMENT OF STERILITY IN THE WOMAN. By DR. DE SINÉTY. Translated by E. P. HURD, M.D. (The Physicians' Leisure Library.) Pp. 130. Detroit, Mich.: George S. Davis.

THE cure of sterility in the female is one of the most vexing and perplexing problems with which the physician is called upon to deal, and its causes are of such a varied nature that unless one's mind is refreshed by some such summary as is presented in this brochure, the true etiology of any one case may readily be overlooked. It should always be borne in mind—and the author fails to mention this—that the sterility is very frequently the result of a lacerated perineum with an associated lack of retentive power of the vagina, so that there is an almost immediate escape of the semen. In such cases perineorrhaphy is very likely to be followed by most happy results. Dr. de Sinéty has given us a systematic and interesting symposium on an important gynecologic condition, and his book has not suffered deterioration at the hands of his translator.

INTERNATIONAL CLINICS: A Quarterly of Clinical Lectures on Medicine, Neurology, Pediatrics, Surgery, Genito-urinary Surgery, Gynecology, Ophthalmology, Laryngology, Otology, Dermatology, etc. Edited by JOHN M. KEATING, M.D., LL.D.; JUDSON DALAND, M.D.; J. MITCHELL BRUCE, M.D., F.R.C.P.; DAVID W. FINLAY, M.D., F.R.C.P. Vol. III, Third Series, 1893.

THIS volume of *International Clinics* fully sustains the enviable reputation made by preceding volumes. The high standard originally set is faithfully adhered to, and the result is the presentation of an interesting panorama of practical medicine of the hour. The contributions come from many parts of the scientific world though, naturally, the larger number are by American teachers. This latter fact, however, cannot be understood to imply any detraction from the merits of the work, for it will be conceded by impartial minds that there is no people that excels the American in practical matters.

Lack of space prevents even the mere mention of the titles or of the names of the authors of the forty-eight papers contained within this volume, and a sense of delicacy forbids the selection of any number for comment. We can, however, truthfully say that the collection of papers is, as a whole, an interesting and instructive one, and reflects great credit upon contributors, editors, and publishers. Twelve plates and twenty figures illustrate the text.

MANUAL OF PHYSICAL DIAGNOSIS. FOR THE USE OF STUDENTS AND PHYSICIANS. By JAMES TYSON, M.D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Second edition, revised and enlarged. 8vo, pp. 241. Philadelphia: P. Blakiston, Son & Co., 1893.

THE deserved approval that has been accorded Dr. Tyson's little manual is indicated by the appearance of a second edition two years after the first. We need not here repeat our previous favorable criticism. We are glad to note that the number of pages has increased from 136 to 241, and the number of illustrations from seven-

teen to thirty-three; that sections have been added on the use of sphygmograph and cardiograph in diagnosis, as well as a chapter on physical examination of the abdomen; besides an appendix detailing methods of making examinations of blood and sputum, of the gastric contents, and of making post-mortem examinations. The popularity of Tyson's *Physical Diagnosis* will be enhanced by this revision.

HYSTERICAL WOMEN: TRIALS, TRICKS, TEARS AND TANTRUMS. By A. W. THORNTON, M.D. Chicago: Donohue & Henneberry, 1893.

A BOOK with a sensational title, with a most sensational frontispiece representing a physician dashing cold water on a patient in hysterical convulsions, surrounded by excited friends, this work has little to commend it, and much that should be severely criticised. It may be imagined that "remarkable cases" and "remarkable cures" are selected and detailed. The author has, he states, written mainly for "the million," and he has certainly selected his material with an eye single to this purpose. There is no attempt to define or to make clear the nature of hysteria; and the oft-repeated methods of cure by cold water, sternness, and the like, evidence the lack of appreciation of hysteria as an actual disease.

AN OUTLINE OF THE EMBRYOLOGY OF THE EYE, WITH ILLUSTRATIONS FROM ORIGINAL PEN-DRAWINGS BY THE AUTHOR. By WARD A. HOLDEN, A.M., M.D., Assistant-Surgeon, New York Ophthalmic and Aural Institute, etc. The Cartwright Prize Essay for 1893. New York: G. P. Putnam's Sons, 1893.

NOTABLE among the many bright and rising students of ophthalmic science is Dr. Holden, who is to be congratulated upon the preparation of this most excellent monograph on the subject expressed in the foregoing title. The beautiful little volume is illustrated with engravings that are a credit to both author and publisher.

DIFFERENTIAL DIAGNOSIS OF COMMON DISEASES OF THE EYE: DESIGNED FOR THE USE OF GENERAL PHYSICIANS. By W. F. CONNERS, Oil City, Pa., 1893.

THIS is a chart about 12 x 15 inches, designed to be hung on the wall, and to aid physicians without instruments and the specialist's knowledge, to make a diagnosis of common eye-diseases. We commend it.

CORRESPONDENCE.

THE MEDICAL EXAMINERS.

To the Editor of THE MEDICAL NEWS,

SIR: THE MEDICAL NEWS of January 27th, in an editorial comment upon the State Board of Medical Examiners law, says: "Pitiful as must be the tacit admission by those who may not have thought seriously upon the subject, that there can be more than one kind of medicine and one kind of physician, it is still a source of congratulation that at least the worst forms of incompetence and downright quackery will no longer find the soil of Pennsylvania adapted for their propagation."

If the medical press in general had been as loyal to the cause of true medicine and had shown the earnestness of spirit in its defence that has been shown by THE MEDICAL NEWS the profession could have escaped this "tacit admission" that there can be more than one kind of medicine.

Instead of congratulation, however, Mr. Editor, that at least the worst forms of quackery will no longer find the soil of Pennsylvania adapted for their propagation, we recognize with regret and chagrin that the Examiners law is formulated to aid in propagating the worst forms of quackery, namely, those forms which claim incorporation, vested rights, etc., and the technical resources that follow in defence of such claims. There is but one kind of medicine and but one kind of physician so long as we have an educational requirement for the physician, provided the physician determines to assert his rights. If the educational qualification has meaning, the educated medical profession is the medical authority as well in therapeutics as in all other medical questions.

The medical profession, not the State or the people, is the authority which must and does decide that we have but one kind of medicine, one kind of physician, and one kind of therapeutics. Therapeutics belongs to the department of medicine, and questions in relation thereto are to be decided by the medical profession, not by the General Assembly, nor by any other than medical authority. But this Examiners law authorizes the Governor to appoint a board of examiners to be composed of homeopaths because the homeopath declares he has a therapeutics upon the basis of the theories of Hahnemann, and that he has a college chartered by the State with power to confer degrees upon the basis of these theories. If the State grants a charter for a medical college, however, with power to confer degrees upon the basis of theories which, by the medical world, have been declared of no value as a therapeutic basis, such a college is incorporated by the State either in ignorance or in disregard of the decision of the medical profession, which, by right of education, is the medical authority of the State.

The medical profession is as undeniably the highest medical authority as is the Supreme Court the highest legal authority, and a judicial decision should here be obtained as to the prerogative of the medical profession, whether or not by right of education its decisions should be respected as the medical authority of the State, and whether or not a medical college can be declared to be legally incorporated which adopts as an educational basis, and by its charter is authorized to confer degrees upon the basis of theories that have been rejected by the medical profession of the world.

A half-century has elapsed since a charter, the first in the world, was granted in Pennsylvania at the request of those claiming to be homeopaths, under which they claim the right to confer degrees upon the basis of the theories of Hahnemann, and during all this time no move has been made by the profession to assert its prerogative in a test of the legality of the incorporation of such a college. Even when a law is passed authorizing the homeopath to receive a license as a competent physician after being examined by a board of homeopaths, the Governor can find members of the medical profession of high intelligence and good professional standing who

yet seem to be willing to still continue this pusillanimity or imbecility as the policy of the profession, and who as members of a board of examiners are willing to coöperate with representatives of incorporated quackery in enforcing this abortion of medical legislation called a Medical Examiners law.

Duty to the public requires the profession to assert its prerogative and secure a legal decision as to the right of a college to employ as an educational basis the rejected theories of Hahnemann, as well as the right of the State to accept the degree of such a college as an evidence of educational qualification for a competent physician.

We may say of the gentlemen named by the Governor as examiners, if they do not know that the man who adopts the theories of Hahnemann as the basis of his therapeutic methods is not a competent physician, that they are themselves not competent to act as examiners, and if they possess that knowledge they should assuredly not coöperate in executing a law which authorizes such men to receive a license as competent physicians.

We have here, Sir, a condition, not a theory. If amiability supplants sagacity, and the gentlemen consent to serve as a board of examiners, the graduates of our colleges by contributing one dollar each instead of paying twenty-five dollars for an examination can have the law set aside by any court in the Commonwealth, not even excepting our Orphans' Court with the President Judge on the bench.

As our medical colleges cannot be said to be in affiliation with the profession and with the colleges of other States, while the faculties are committed to the support and are willing to aid in enforcing a law which authorizes homeopaths to receive a license as competent physicians, we hope the members of these faculties will lose no time in placing themselves on record as opposing this law, the execution of which is in conflict with the medical authority which colleges in good standing are required to support.

S. UPDEGROVE.

PHILADELPHIA, January 29, 1894.

THE ADMINISTRATION OF HEALTH-ORDINANCES.

To the Editor of THE MEDICAL NEWS,

SIR: Desiring to learn something concerning the health-ordinances in force in the city of Philadelphia, I recently applied to the Health-Officer for a circular or pamphlet containing such, and was surprised to learn from him that no such collective pamphlet exists, that only by searching through the several annuals, dating back, I suppose, to the earliest times, and by wading through a mass of digests and commentaries, could I obtain a knowledge of the laws I am supposed to obey. Possibly there has never been a demand such as I have made. As is usual with all ordinances, no one seems to care for them after they have once been brought into existence; but health-laws must and should be common knowledge. A tenant, for instance, ought to know what authority the Board of Health possesses over his landlord.

A citizen ought to be aware of the laws respecting various nuisances. Physicians especially ought to know what rights they have or can use in correcting unsanitary conditions. I have reason to believe that were the present statutes enforced many of the evils of the "slums" would be done away with, many hovels, breeding-places of disease, would be torn down, and the filthy condition of some of the courts and streets an impossibility; but no one seems to know—I mean, among the citizens—what the laws on the subject really are, and, therefore, they do not insist on their enforcement or aid in calling the attention of the proper officials to possible neglect of duty. It seems to me that here would be a good beginning for active propaganda in the education of citizens in public hygiene. Let such an organized body as the County Medical Society, or the College of Physicians, or the journal you, Sir Editor, have the honor to direct, prepare for public distribution copies of the more general health-ordinances now in force; let them be printed in various languages, and plainly worded, and let them be given a wide distribution and circulation.

From time to time, as new laws are made or old ones repealed, a revision of such a circular would have to be made. How foolish to expect a community so composite as this one to be sanitary, when the first principles of sanitation are unknown to the majority of its members.

What society or corporation could exist without making known to its members its vital and governing laws? Every one of us must have violated these health-ordinances time and again, yet had we been apprehended for such violation ignorance would not have been a valid excuse. Medical societies and medical journals can do very much to inaugurate a practical system of hygienic education of the public, and to aid and maintain it. It is as necessary during ordinary times as in epidemics of smallpox and cholera. Respectfully,

M. V. BALL, M.D.

RESIDENT PHYSICIAN, EASTERN STATE PENITENTIARY, PHILADELPHIA.

[Certainly the Board of Health should have at hand, together, all of the ordinances that appertain to its functions as an administrative body, and it should further see that the community is made to know of the existence of these ordinances and of their requirements in order that they may be enforced, either voluntarily or upon the authority of the Board.—ED. NEWS.]

NEWS ITEMS.

The Medical Society of the District of Columbia will celebrate the seventy-fifth anniversary of its organization in Washington, on Friday evening, February 10, 1894. The following program has been arranged:

"Invocation," by Rev. Wm. A. Bartlett, D.D.

"Address by the President," Samuel C. Busey, M.D., LL.D.

"Address of Congratulation," by Theophilus Parvin, M.D., LL.D. (Representative of the College of Physicians of Philadelphia).

"Address—History of the Medical Society of the District of Columbia," by Wm. W. Johnston, A.M., M.D.

"Address—History of the Hospitals of the District of Columbia," by J. Ford Thompson, M.D.

"Address—History of the Medical Colleges of the District of Columbia," by Thompson C. Smith, M.D.

Mathews' Medical Quarterly, a journal devoted to diseases of the rectum, gastro-intestinal disease, and rectal and gastro-intestinal surgery, has made its first appearance. It is published at Louisville, Ky., and is owned and edited by Dr. Joseph M. Mathews, with Dr. Henry E. Tuley as Associate Editor and Manager. The first number contains 186 pages, and includes sixteen original articles by well-known writers, together with reports of society meetings, editorial articles, and abstracts from current medical literature. The editors request the names of all reputable surgeons in the United States that limit their practice to the treatment of diseases of the rectum. The new venture deserves to succeed.

The Effects of Medical Legislation.—At the last meeting of the State Board of Medical Examiners of the State of Washington, held in Seattle, there were twenty-two applicants for a license to practise, of whom twelve failed to pass the required examination and were rejected. The Board now requires a general average of 75 per cent. on all branches, a rise from its former standard, and soon the standard will be raised to 80 per cent.

Dr. Ch. E. Quinquaud, member of the French Academy of Medicine, Professor Agregé of the Paris Faculty, Physician to the Hôpital Saint-Louis, Chevalier of the Legion of Honor, died on January 9th, at the age of fifty-two years.

Adolf Heider, Assistant in Hygiene in the University of Vienna, died recently of meningitis in the sequence of an attack of influenza complicated by pneumonia.

Dr. Frank D. Beane, of New York City, died at Lake North, Fla., in his forty-third year, on January 6, 1894, of remittent fever.

Dr. Murdoch Cameron has been appointed to the vacant chair of Midwifery in the University of Glasgow.

Heubner, of Leipzig, has been elected the successor of Henoch in the chair of Pediatry at Berlin.

Dr. Paul Diday, the distinguished French surgeon, died on January 9th, at the age of eighty-three years.

Van Beneden, the celebrated Belgian naturalist, died recently at the age of eighty-five years.

BOOKS AND PAMPHLETS RECEIVED.

The Simple Dressing after Cataract-extraction. By T. E. Murrell, M.D. Reprinted from the Ophthalmic Record, 1893.

A Brief Review of the Attitude of Our Medical Schools in Relation to Matriculate and Graduate Studies. By R. Lowry Sibbet, A.M., M.D. Pamphlet. Carlisle, Pa.

Kentucky School of Medicine in the City of Louisville. Register of Students, 1893. Circular of Information, 1894.

Tattooing and Its Successful Removal. By A. H. Ohmann-Dumesnil, A.M., M.D. Extract from the New York Medical Journal, 1893.

Sectarianism in Medicine. By E. R. Cutler, M.D. Reprinted from the Boston Medical and Surgical Journal, 1893.

The Importance of Early Mastoid Operations in Acute Suppurative Otitis. By F. C. Hotz, M.D. Reprinted from the Chicago Medical Recorder, 1893.

Index-Catalogue of the Library of the Surgeon-General's Office United States Army. Authors and Subjects. Vol. XIV. *Sutures-Universally.* Washington: Goverament Printing Office, 1893.

A Consideration of the Paresthetic Neuroses. By Joseph Collins, M.D. Reprinted from the Boston Medical and Surgical Journal, 1893.

An Analysis of One Hundred and Twenty-five Cases of Chorea. By Joseph Collins, M.D. Reprinted from the Post-Graduate, 1893.

Address on the Germ-Theory of Disease, with Special Reference to Kochspiel. By D. Campbell Black, M.D. Pamphlet. Glasgow: Hugh Hopkins, 1891.

Inaugural Address to the Physiology Class in Anderson's College, Session 1891–92. By D. Campbell Black, M.D. Pamphlet. Glasgow: Hugh Hopkins, 1891.

A Practical Treatise on Diseases of the Skin, for the Use of Students and Practitioners. Third edition, thoroughly revised and enlarged. By James Nevins Hyde, A.M., M.D. Philadelphia: Lea Brothers & Co., 1893.

Transactions of the American Surgical Association. Vol. XI. Edited by DeForest Willard, M.D. Philadelphia: Printed for the Association and for sale by William J. Dornan, 1893.

Sarcoma of the Pia and Brain, Simulating Brain-tumor; Monospasm and Mono-paresis; Operation. By J. T. Eskridge, M.D. Reprinted from the Journal of the American Medical Association, 1893.

Obstructions to the Function of Micturition, and the Results. By R. L. Payne, Jr., M.D. Reprinted from the Virginia Medical Monthly, 1893.

The Misuse of Drugs in Modern Practice. By John T. G. Nichols, M.D. Delivered in Boston before the Massachusetts Medical Society, June 14, 1893. (Pamphlet.)

The Students' Quiz Series. Chemistry and Physics. A Manual for Students and Practitioners. By Joseph Struthers, Ph.B., D. W. Ward, Ph.B., and Charles H. Willmarth. Philadelphia: Lea Brothers & Co., 1893.

Text-book of Normal Histology: Including an Account of the Development of the Tissues and of the Organs. By George A. Piersol, M.D. Philadelphia: J. B. Lippincott Company, 1893.

Lectures and Essays on Fevers and Diphtheria, 1849 to 1879. By Sir William Jenner, Bart., G.C.B. New York: MacMillan & Co., 1893.

Transactions of the Medical Society of the State of West Virginia. Twenty-sixth Annual Session, held at Parkersburg, June 7, 8, and 9, 1893. Wheeling: Intelligencer Publishing Co., 1893.

Address to the Profession and the Public. By J. T. Graham, M.D., of Wytheville, Va. Pamphlet, 1893.

The Principles and Practice of Surgery. By John Ashhurst, Jr., M.D. Sixth edition. Philadelphia: Lea Brothers & Co., 1893.

Medical Report of the Philadelphia Dispensary for Skin Diseases, Covering a Period of Ten Years and Nine Months (February, 1880, to November, 1890). By the Attending Physician, Henry W. Stelwagon, M.D. Pamphlet, 1893.

The Pilgrimage and Civilization of the Toltecs. By David Cerna, M.D., Ph.D. Reprinted from the Transactions of the Texas Academy of Science, 1893.

Chun-king Hospital of the Methodist Episcopal Church. First Annual Report. Kiu-kiang: The Central China Press, 1892.

Chirurgie des Voies Urinaires. Etudes Cliniques, par le Dr. E. Loumeau. Second edition. Bordeaux: Feret et Fils, 1894.

The Pneumatic Cabinet in the Treatment of Pulmonary Phthisis. By C. E. Quimby, A.M., M.D. Reprinted from the International Medical Magazine, 1893.

Manual of Bacteriology for Practitioners and Students, with Especial Reference to Practical Methods. By Dr. S. L. Schenk. Translated from the German by W. A. Dawson, B.A., M.D. London and New York: Longmans, Green & Co., 1893.

Three Introductory Lectures on the Science of Thought. By F. Max Müller. Chicago: The Open Court Publishing Co., 1893.

Aural Vertigo (Ménière's Disease). By L. Harrison Mettler, A.M., M.D. Reprinted from the Journal of the American Medical Association, 1893.